ICONES PLEUROTHALLIDINARUM

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SYSTEMATICS OF THE PLEUROTHALLIDINAE (ORCHIDACEAE)

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SYSTEMATICS OF THE PLEUROTHALLIDINAE

CARLYLE A. LUER

Missouri Botanical Garden

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Lepanthes polytricha Luer
Province of Morona-Santiago, Ecuador, alt. 1800 meters above sea level, 17 Feb. 1986, photo by Alexander C. Hirtz.

SYSTEMATICS OF THE SUBTRIBE PLEUROTHALLIDINAE (ORCHIDACEAE)

Carlyle A. Luer

ABSTRACT

The subtribe Pleurothallidinae and its morphological features are discussed. A list of all generic names published in the Pleurothallidinae, and a key to the genera are presented. Each genus, with keys to the subgenera and sections where applicable, is briefly described. A black and white illustration of each genus is included.

New taxa and combinations:

Frondaria Luer, gen. nov.
Frondaria caulescens (Lindl.) Luer, comb. nov.
Lepanthes subgen. **Brachycladium** Luer, nom. nov.
Lepanthes subgen. **Draconanthes** Luer, subgen. nov.
Lepanthes subgen. **Marsipanthes** Luer, subgen. nov.
Lepanthes subgen. **Marsipanthes** sect. **Caprimulginae** Luer, sect. nov.
Lepanthes subgen. **Marsipanthes** sect. **Felinae** Luer, sect. nov.
Lepanthes subgen. **Marsipanthes** sect. **Marsipanthes** Luer, sect. nov.
Myoxanthus aspasicensis (Rchb. f.) Luer, comb. nov.
Myoxanthus lappiformis (Heller & L.O.Wms.) Luer, comb. nov.
Myoxanthus pan (Luer) Luer, comb. nov.
Myoxanthus pastacensis (Luer) Luer, comb. nov.
Myoxanthus sempergemmatus (Luer) Luer, comb. nov.
Myoxanthus spilanthus (Barb. Rodr.) Luer, comb. nov.
Myoxanthus stonei (Luer) Luer, comb. nov.
Myoxanthus uncinatus (Fawc.) Luer, comb. nov.
Platystele subgen. **Teagueia** Luer, subgen. nov.
Restrepiopsis subgen. **Endresia** Luer, subgen. nov.
Salpistele dielsii (Mansf.) Luer, comb. nov.
Salpistele pensilis (Schltr.) Luer, comb. nov.
Stelis sect. **Nexipous** (Garay) Luer, stat. nov.
Trichosalpinx subgen. **Tubella** Luer, subgen. nov.
Trichosalpinx subgen. **Tubella** sect. **Apodae** Luer, sect. nov.
Trichosalpinx subgen. **Tubella** sect. **Pseudolepanthes** Luer, sect. nov.
Trichosalpinx subgen. **Tubella** sect. **Tubellae** Luer, sect. nov.
Trichosalpinx microlepanthes (Griseb.) Luer, comb. nov.
Zootrophion schenckii (Cogn.) Luer, comb. nov.

In Dressler's recent classification of the Orchidaceae (Dressler 1981), the subfamily Epidendroideae is divided into nine tribes. Tribe Epidendreae is divided into ten subtribes, the largest of which is the Pleurothallidinae with perhaps as many as 4,000 species in 29 genera. They are widely distributed in tropical America from southern Mexico and Florida to southern Brazil. The Pleurothallidinae are distinguished by single-leaved, non-pseudobulbous stems (ramicauls), and a deciduous ovary articulated with the pedicel. About half the species have been customarily treated in one conglomerate genus, *Pleurothallis*. Treated separately, this genus contains many discordant elements that might

be recognized as genera, but are best treated as subgeneric taxa.

The systematics of *Pleurothallis* and *Masdevallia* will be published separately because of the large number of subgeneric taxa. Publications of the species of these two genera and those of *Lepanthes* and *Stelis* will be divided into geographical or political areas because of their great numbers. The remaining smaller genera will be published individually in their entirety, that is, as completely as known at the time of publication.

The taxonomy of the subtribe Pleurothallidinae has long been in need of revision. Prior keys to the genera and species, based on dried, or dried and reconstituted flowers, are fraught with problems. Subtle and even obvious differences and similarities have eluded careful researchers. Unnatural groupings have been formed, and related elements have been dispersed into distant parts of the keys. Early misconceptions are often perpetuated without subsequent re-evaluation. Difficulties have arisen because the minute, delicate, morphological features of the pleurothallid flower are usually either distorted or destroyed in the process of pressing and drying, thus obscuring interpretations of relationships. Vegetative anatomy has been largely overlooked until recently.

Old keys have been based on variable and commonly shared features such as the size of the spathe, the shape of the leaf, the length of the raceme etc., most of which fail to bring related species together. In more recent keys the primary cleavage is based on the number of pollinia, but if the pollinia are absent from a specimen in question, as is often the case, a problem immediately arises.

Generic delimitations within the Pleurothallidinae, and within other subtribes or tribes as well, have sometimes been determined by a single character, and in some cases, this character is microscopic (e.g., the number of pollinia.) I believe that, when possible, a genus should be recognizable by the appearance of the plant as a whole. Therefore, for the purpose of identification in the following artificial key, vegetative features are considered first, followed where feasible by characteristics of the inflorescence, and finally by features of the floral parts, first gross, then microscopic.

In the orchids and some other rapidly evolving pollinator-oriented families (e.g. the Gesneriaceae, Scrophulariaceae, etc.) certain vegetative features seem to be more basic and stable than some floral features, providing characters that help in delineating groups. Some floral features seem to be more fluid, i.e., more readily altered by the pressures of speciation, the column not excepted. There is no reason why evolutionary divergence or convergence should be excluded from the morphology of any of the components of the plant, vegetative or floral. Where to draw generic or subgeneric lines is a perplexing problem. Certain criteria which seem important in defining some taxa are unimportant in others.

Although a few species in almost every genus will be readily recognized by some remarkable peculiarity of their habit or vegetative parts (e.g., the pendent leaves of *Masdevallia caesia* Roezl and *Stelis caudaequina* Luer & Vásquez), some plants will defy identification to genus without flowers (some species of *Masdevallia* as opposed to some species of *Pleurothallis, Scaphosepalum, Stelis*, etc.). Fortunately, even old, sterile parts of inflorescences will aid in diagnosing the genus. Figure 1. is a generalized sketch of the vegetative parts of a pleurothallid.

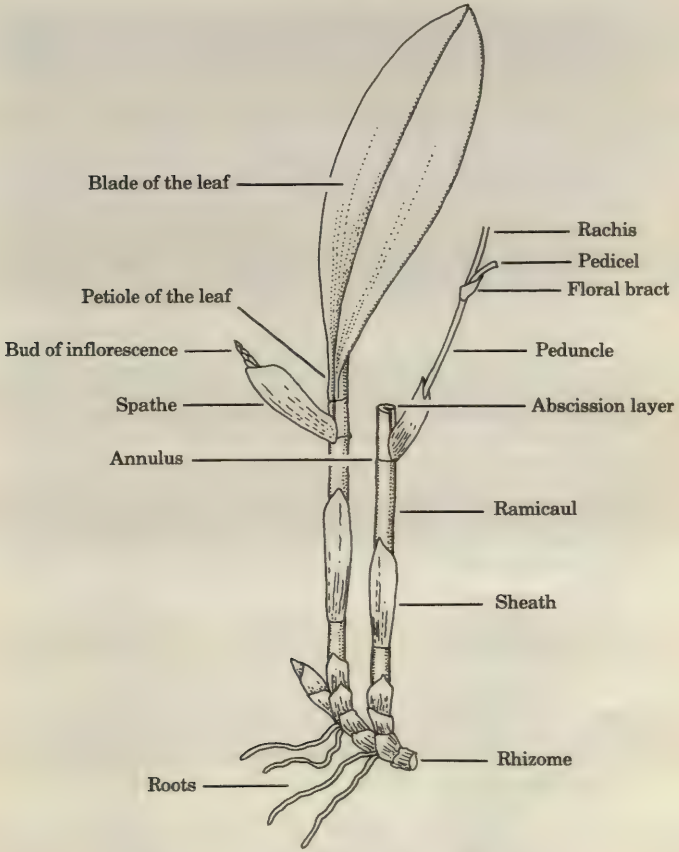

Figure 1. A generalized sketch of a pleurothallid.

The habit of the rhizome (the "primary stem") cannot be a good generic criterion because both densely caepitose plants (those with an abbreviated rhizome) and plants with a long, repent or scandent rhizome occur randomly within many genera, a good example of genera sharing a common genetic potentiality. Coupled with other features, the repent rhizome may offer some diagnostic clues. Strictly speaking, the primary stem is the first stem produced by the protocorm, and all subsequent stems are secondary.

Roots cannot be used satisfactorily for generic identifications. Within some genera the roots may be thin and slender, or thick and fleshy. Some roots are partially pubescent, most are not. Some roots are purple, and these may be seen in *Lepanthes, Platystele,* or *Pleurothallis.* In some taxa branching of the roots is frequent (e.g., *Dresslerella, Pleurothallis* subgen. *Kraenzlinella*), but this quality is infrequent in most species.

The ramicaul, a new term suggested for use in the Pleurothallidinae to replace the old term "secondary stem" (Stern & Pridgeon 1984), the more or less erect, aerial stem that bears the leaf, is always normally unifoliate at the apex. Sometimes it may not appear to be unifoliate in species (e.g., *Myoxanthus chloë* Luer & Vásquez, or *Pleurothallis ramulosa* Lindl.) with prolific stems, ramicauls that produce other ramicauls at the same point of emergence as the inflorescence. The ramicaul may be extremely short or markedly elongated, slender or stout, terete, sharply laterally compressed, triquetrous, or even four-angled as in *Pleurothallis tetragona* Luer & Escobar. When three-angled, the margins of the leaf are sometimes decurrent on the wings of the stem so that the inflorescence seems to emerge from the blade of the leaf some distance above the base. Most of these qualities are good generic clues.

A non-proliferated ramicaul originates from the rhizome at an annular node, presumably the site of origin of all the vascular bundles contained within that ramicaul. Within the stem the peripheral foliar bundles surround the more central floral bundles (Figure 2.). The stem is typically cylindrical and non-pseudobulbous, although in some species of *Myoxanthus*, the ramicaul is distinctly swollen at the base.

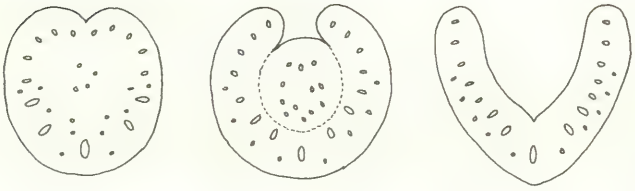

Figure 2. Cross-sections of the ramicaul of a species of *Stelis*.
A. through the shaft.
B. just below the emergence of the inflorescence.
C. just above the emergence of the inflorescence.

The shaft of the ramicaul is variously enclosed by more or less distinctive types of tubular sheaths (e.g., *Lepanthes, Myoxanthus, Restrepia, Trichosalpinx*, etc.), each sheath originating at a superficial, annular node from a few of the most peripheral bundles without disturbance of the more internal bundles. In the Pleurothallidinae the apex of the

ramicaul is considered to extend to the abscission layer with the leaf, where all foliar bundles eventually become disrupted (Figure 3.). In some abnormal clones the abscission layer may be lacking, in which case the old, desiccated leaves remain unshed on the stems.

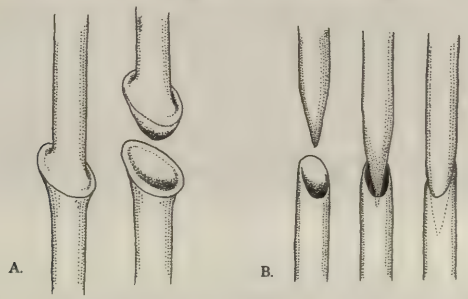

Figure 3. Diagramatic sketches of vascular bundles at the abscission layer. A. *Pleurothallis* sp. B. *Myoxanthus* sp.

The site of emergence of the inflorescence is apical or lateral from near or very near the apex of the ramicaul, or from some distance below it, but almost always above any node of a cauline sheath, and with or without an association of an as yet unexplained "ring" (Figure 4.). In a very few instances the inflorescence emerges from a point on the ramicaul below the level of a cauline sheath, or even from the rhizome [e.g.,

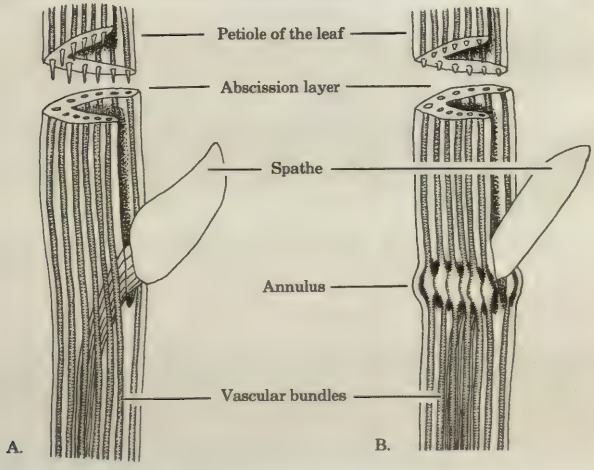

Figure 4. Diagramatic sketches of the terminal segment of the ramicaul. A. *Myoxanthus* sp. B. *Stelis* sp.

Myoxanthus lappiformis (Heller & L.O.Wms.) Luer or *Pleurothallis johnsonii* Ames], and in these cases without the associated ring.

The origin, function and analogy of this ring are unknown. It is a discrete, non-sheath-bearing, annular thickening or groove usually easy to see encircling the ramicaul at the level of the emergence of the inflorescence. Within this ring, or "annulus," the vascular bundles to the leaf are abruptly thickened and adherent in a transverse plane. At this level within the ramicaul the floral node develops at the termination of the floral vascular bundles. In species without an annulus the floral node is exserted, not contained within the substance of the ramicaul, although the distance may be very short. However, there is sometimes only a localized swelling at this level, and the vascular bundles continue without change to the abscission layer. If it were not for the absence of the annulus in many genera, the ramicaul of the pleurothallid might be interpreted to terminate at the annulus instead of the leaf-stem abscission layer. At least in the Pleurothallidinae the abscission layer may be considered to indicate the apex of the ramicaul.

The annulus is absent in all genera with more than two pollinia. It is best developed in some subgenera of *Pleurothallis*, but in other subgenera it is faint, obscured by the abscission layer, or totally absent. As with other morphological features, the annulus is important in delineating some taxa, but not others.

Although the leaves of some genera are distinctive (e.g., the thin, sharply carinate leaves of *Dracula*, and the thick, ciliated leaves of *Dresslerella*), the size and shape are too variable to be of much value in determining most genera. Thick, fleshy leaves, more than can be considered simply coriaceous, occur seemingly randomly in many genera, especially in species from xerophytic habitats. In *Pleurothallis* subgen. *Pleurobotryum* the fleshy leaves, often laterally compressed, seem to be a constant character. Terete leaves occur in species of *Dryadella*, *Lepanthes*, *Masdevallia*, *Octomeria*, *Platystele*, several subgenera of *Pleurothallis*, and *Stelis*. Verrucose leaves occur in *Lepanthes*, *Pleurothallis*, and *Porroglossum*. Pubescent leaves occur in *Dresslerella* and *Lepanthes*, and erose leaves occur in *Lepanthes*, *Lepanthopsis*, and *Pleurothallis*. Recent studies in foliar micro-anatomy have supported the segregation of some genera (Pridgeon & Stern 1982).

The apex of the leaf of the majority of the pleurothallid genera is minutely notched, or cleft, with the tip of the midrib extending as a mucro in the sinus, hence the term tridenticulate. The apex of the leaf of *Dresslerella* is entire. The base of the pleurothallid leaf is either sessile or, more or less distinctly narrowed into a petiole above the abscission layer. In the Pleurothallidinae the petiole is merely the constricted base of certain leaves.

The inflorescence, single-flowered or racemose, emerges with a bract which is specialized in many species of several genera into a conspicuous spathe. The peduncle and rachis are usually terete, but they may be verrucose, pubescent, laterally compressed, or triquetrous. The raceme may be solitary or multiple, long or short, stout or slender, erect or pendent, few- to many-flowered. Or, the raceme may be reduced to a single flower, often merely a manifestation of a very abbreviated raceme from an obsolescent peduncle hidden within the spathe. Solitary flowers may be borne by long or short pedicels, by long or short

peduncles, and they may appear successively or simultaneously, sometimes in dense fascicles.

The floral bract, sometimes conspicuous, subtends the pedicel. The pedicels of solitary flowers and the terminal flowers of racemes produce a vestige of the "next" flower in the form of a filament from their adaxial surface. The filament may be microscopic, or so large as to protrude beneath the flower as an aborted bud. Ames noticed this vestigial structure on a species of *Restrepia* and, apparently believing the structure to be unique, he described the species as *R. filamentosa*. A filament is present in all species of *Restrepia* (Plate 21.). A prominent filament is also present on the pedicel of all species of *Barbosella* (Plate 2.) and *Brachionidium* (Plate 4.).

The tricarpellate ovary, articulated with the pedicel, may be smooth, pitted, grooved, ribbed, crested, pubescent, verrucose, or echinate, all features shared by many genera. At the present time it is not believed to be of generic diagnostic value.

The three sepals are commonly similar, and various degrees of adhesion or connation occur. A constricted sepaline tube formed by the deep connation of all three sepals has developed in some species of *Masdevallia, Pleurothallis* subgen. *Physosiphon* and *Sarracenella*, and *Trichosalpinx obliquipetala* (Ames & Schweinf.) Luer. In other taxa (*Ophidion*, three subgenera of *Pleurothallis*, and *Zootrophion*), the sepals are adherent or connate at the apex. In species of many genera the lateral sepals are united into a synsepal which often appears similar to the free middle sepal. A multitude of variations in the size, shape, texture, and color may be seen. The transverse callus above the base of the sepals in *Dryadella*, and the large, cushionlike callus at the apex in *Scaphosepalum* are hallmarks of these genera. The apices of the sepals are drawn out into tails in most of the species of *Dracula, Masdevallia, Pleurothallis* subgen. *Muscaria, Porroglossum*, and *Scaphosepalum*.

The two petals are always similar to each other, but they, too, are subject to a myriad of modifications. In *Octomeria* they approach the sepals in size, shape, and color. In other genera they may be reduced to minute, vestigial organs (e.g., *Pleurothallis vestigipetala* Luer). The petals in other genera may be specialized into functional roles. The apices of the petals of some species have evolved osmophores (e.g., some species of *Myoxanthus* and *Restrepia*). In *Dracula* the petals are bivalved and verrucose at the apex. In *Stelis* they are typically transversely thickened along the obtuse apical margin. In *Masdevallia* they are typically longitudinally thickened along the labellar margin, often forming a tooth. In *Lepanthes* the petals are usually transversely bilobed.

As would be expected, the lip may vary greatly. The shape, lobulations and calli may vary markedly within the species of a single genus (e.g., *Myoxanthus*), but in some taxa the basic pattern remains more or less constant (e.g., *Pleurothallis* subgen. *Specklinia*). In some species the lip is reduced to a mere vestige (e.g. *Pleurothallis abortiva* Luer). The mysteries surrounding the mushroomlike lips of the species of *Dracula* remain unsolved. Various forms of nectaries or other morphological features evolved as pollinator attractants occur. The middle lobe of the lip of many species of *Lepanthes* is modified into a lure which resembles that of an angler fish.

In many species of *Brachionidium, Lepanthopsis, Platystele, Pleurothallis,* and *Stelis,* there is a well-demarcated, more or less circular structure on the front surface of the lip just above the base and positioned beneath the stigma (Plate 18.). The function of the "little eye," the glenion, is unproven, but in all likelihood it plays an important role in attracting the pollinator.

The base of the lip in most genera is usually delicately hinged to the apex of the column-foot by a thin membrane or strap. Sometimes the strap is so short and tight that the lip actually becomes adnate to the column-foot as seen in *Dracula chimaera* (Rchb. f.) Luer and *Pleurothallis xiphizusa* Rchb. f. and a few of its allies. The hinge may be a ball-and-socket articulation as in *Barbosella,* or the base may not be hinged at all, but connected directly to the undersurface of the column as in *Lepanthes,* or connected to the column-base by an immobile cylindrical rod as in *Restrepia.*

A different mechanical device for effecting a springlike, sensitive lip has evolved independently in three genera: *Acostaea, Condylago* and *Porroglossum.* See text.

The column is also found to be subject to extreme changes. It may be long or short, slender or stout, winged or wingless, and with or without a basal extension, the column-foot. The basic patterns of related groups may be greatly modified, sometimes almost beyond recognition as in some subgeneric taxa of *Pleurothallis.*

The position of the anther, rostellum and stigma vary greatly, even within a well-recognized genus, and to some degree even within a species. The anther and rostellum may be dorsal, apical and antrorse (pointed forward and exposed), ventral and retrorse (pointed backward and more or less hooded) (Figure 5.), or any degree in between. When the anther bed lies "on top" of the resupinate column, the anther is "dorsal." In the latter case the rostellum is "apical." When the anther bed, or the stigma, occupies the end of the column, it is "apical." When the anther bed and the stigma are situated on the under surface of the column with or without a hooded apex, they are "ventral."

According to accepted orchid terminology, however, the position of the anther is said to be either "erect" or "decumbent," which are synonymous with "dorsal" and "ventral" as used in these papers on the Pleurothallidinae.

I have, however, avoided commonly used terms such as erect, porrect, decumbent, incumbent, reclining, etc., which mean something different to each of us. Since the column is most often horizontal in the natural position, even when the flower is non-resupinate, does an "erect" anther stand up on the column perpendicularly? In its common usage for orchids, however, "erect" means parallel to the shaft of the column. But, either a dorsal or a ventral anther can be parallel to the shaft.

The pollinia, in pairs, 2, 4, 6, or 8 in number, are usually yellow, firm in texture, usually ovoid, with or without a caudicle which, when present, may be granular or elastic. They may or may not be associated with a tiny viscidium, or a droplet from the rostellum. Species which normally have one or two pairs of pollinia may rarely produce an additional pair.

The generic significance of the number of pollinia is debatable: should the number define a genus, or should different numbers be

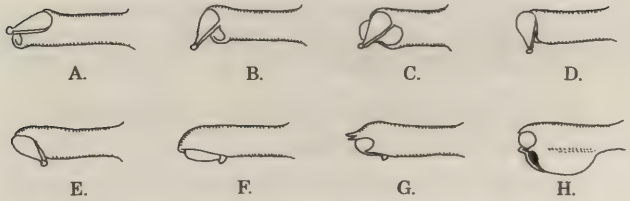

Figure 5. Diagramatic sketches of some forms of the column.
A. Anther apical (dorsal); stigma apical.
B. Anther apical; stigma apical.
C. Anther apical; stigma apical, bilobed.
D. Anther apical (subapical); stigma ventral.
E. Anther ventral, non hooded; stigma ventral.
F. Anther ventral, hooded; stigma ventral.
G. Anther ventral, the clinandrium toothed; stigma ventral.
H. Anther ventral; stigma ventral; column winged.

allowed within a genus? If the latter were acceptable, *Restrepiella* with four pollinia and *Chamelophyton* with six pollinia might drop into *Pleurothallis* with two pollinia, and *Restrepiopsis* with four pollinia might be united with *Octomeria* or *Pleurothallopsis*, each with eight pollinia. Both six and eight pollinia must be allowed in *Brachionidium*. Therefore, the numbers of pollinia cannot be as important to generic delimitations as once believed by some authors.

The stigma is always solitary, although it is transverse or bilobed in *Brachionidium, Lepanthopsis* and *Platystele*, and in many species of *Pleurothallis* and *Stelis*. Even a few species of *Lepanthes* have a bilobed stigma. When bilobed, the two lobes can be seen to be confluent beneath the rostellar flap. In some extreme cases in *Stelis*, the receptive surfaces extend outward on long arms.

In summary, I conclude that keys to the genera and subgenera must be totally artificial. It is impossible at this time to construct any phylogenetic order; even the direction of the evolution of the number of pollinia, from 2 to 8, or from 8 to 2, is debatable. If the direction were from 8 to 2, as a reduction in numbers would seem to imply, a racemose inflorescence and the annulus would have to be acquired structures. The other way, I believe, is more likely. It appears as if an increase in the number of pollinia developed independently in several isolated lines of evolution.

A KEY TO THE GENERA OF THE PLEUROTHALLIDINAE

1 Sheaths of the ramicauls leaflike; pollinia 2, spherical ..... *Frondaria*
1′ Sheaths of the ramicauls not leaflike 2

2 Sheaths of the ramicauls lepanthiform (sheaths tubular, ribbed, more or less imbricating, with oblique, margined ostia, the ribs and margins of the ostia usually ciliate or scabrous); pollinia 2 3
2′ Sheaths of the ramicauls not lepanthiform 5

Sheaths of the ramicauls lepanthiform, the plants caespitose, repent, or prolific

3 Column more or less cylindrical, footless ..... *Lepanthes*
3′ Column short and broad with a rudimentary foot, or short to elongate with a well-developed foot 4

4 Column short and broad with a rudimentary foot, the stigma apical and transversely bilobed ..... *Lepanthopsis*
4′ Column short to elongate, with a short or well-developed foot, the stigma not transversely bilobed ..... *Trichosalpinx*

* * *

5 Sheaths of the ramicauls with appendages or trichomes 6
5′ Sheaths of the ramicauls glabrous 11

Sheaths of the ramicauls pubescent, the plants caespitose, repent or prolific

6 Inflorescence 1-flowered; ramicauls without an annulus 7
6′ Inflorescence racemose; ramicauls with an annulus 10

7 Leaves ciliate or pubescent; pollinia 4, 2 large, 2 small ..... *Dresslerella*
7′ Leaves glabrous 8

8 Ramicauls longer than the rhizome; pollinia 2 or 4 9
8′ Ramicauls shorter than the rhizome; pollinia 6 or 8 ..... *Brachionidium*

9 Peduncle shorter than the leaf; pollinia 2 ..... *Myoxanthus*
9′ Peduncle longer than the leaf; pollinia 4 ..... *Restrepiopsis reichenbachiana*

10 Petals transverse and thickened at the apex ..... *Stelis*
10′ Petals not transverse and thickened at the apex ..... *Pleurothallis*

* * *

11 Plants not caespitose, the rhizome distinctly repent or ascending, or the ramicauls prolific (ramicauls produced from the apices of other ramicauls) .....
11′ Plants caespitose, or the rhizome so shortly repent that clumped stems are produced, the ramicaul not normally prolific 12 34

12 Ramicauls prolific 13
12′ Ramicauls distant, the rhizome distinctly repent or ascending 16

Ramicauls prolific, the sheaths neither lepanthiform nor pubescent

13 Sepals connate at the apex ..... *Zootrophion*
13′ Sepals free at the apex 14

14 Petals callous along the labellar margin ..... *Masdevallia assurgens*
14′ Petals not callous along the lower margin 15

15 Petals transverse and callous at the apex ..... *Stelis*
15′ Petals not transverse and callous at the apex ..... *Pleurothallis*

* * *

16 Ramicauls shorter than the leaves 17
16′ Ramicauls longer than the leaves 30

Habit repent; ramicaul short, the sheaths neither lepanthiform nor pubescent

17 Inflorescence 1-flowered; ramicauls without an annulus 18
17′ Inflorescence racemose, 2- or more flowered; pollinia 2 25

18 Column short, the anther and stigma apical 19
18′ Column elongate, the anther and stigma ventral 21

19 Stigma bilobed; pollinia 6 or 8 ..... *Brachionidium*
19′ Stigma entire 20

20 Plant minute, leaves less than 3 mm long; pollinia 4 ..... *Barbrodria*
20′ Leaves at least 5 mm long; pollinia 8 ..... *Octomeria*

21 Lip concave at the base, articulated with the bulbous apex of the column-foot; pollinia 4 ..... *Barbosella*
21′ Lip hinged simply to the column-foot 22

22 Petals fleshy toward the apex; pollinia 2 ..... *Myoxanthus*
22′ Petals membranous 23

23 Petals nearly equal in size to the sepals; pollinia 8 ..... *Octomeria*
23′ Petals distinctly smaller than the sepals 24

24 Pollinia 2 ..... *Pleurothallis*
24′ Pollinia 6 ..... *Chamelophyton*

25 Petals callous along the labellar margin ..... *Masdevallia racemosa*
25′ Petals not callous along the lower margin 26

26 Lip attached by a long claw to the back of an elongated column-foot ..... *Porroglossum eduardii*
26′ Lip not attached by a claw to the back of the column-foot 27

27 Anther and stigma apical, surrounded by a collar at the apex of a footless column ..... *Salpistele*
27′ Column not as above 28

28 Petals transverse and callous at the apex ..... *Stelis*
28′ Petals not transverse and callous at the apex 29

29 Lip hinged to a rudimentary column-foot ..... *Platystele*
29′ Lip hinged to a well-developed column-foot ..... *Pleurothallis*

* * *

Habit repent; ramicaul long, the sheaths neither lepanthiform nor pubescent

30 Inflorescence 1-flowered 31
30′ Inflorescence racemose; pollinia 2 33

31 Petals nearly equal in size to the sepals; pollinia 8 ..... *Octomeria*
31′ Petals distinctly smaller than the sepals; pollinia 2 32

32 Petals fleshy at the apex ..... *Myoxanthus*
32′ Petals membranous ..... *Pleurothallis*

33 Petals transverse and callous at the apex ..... *Stelis*
33′ Petals not transverse and callous at the apex ..... *Pleurothallis*

* * *

34 Ramicauls noticeably to much shorter than the leaf; sheaths 2-3 35
34′ Ramicauls nearly equal to or longer than the leaf; sheaths 2-8 56

35 Lip motile, sensitively hinged to the column-foot; pollinia 2 36
35′ Lip not sensitively hinged to the column-foot 38

Lips sensitive

36 Lip broadly hinged under tension to the column-foot ..... *Acostaea*
36′ Lip attached to the column-foot by a slender strap 37

37 Base of the blade of the lip with a callus appressed to the slender, curved column-foot ..... *Porroglossum*
37′ Base of the blade of the lip with a pair of armlike calli appressed to the bulbous base of the column-foot ..... *Condylago*

* * *

38 Plants small, the average height less than 10 cm tall (excluding inflorescence) 39
38′ Plants large, the average height more than 10 cm tall (excluding inflorescence) 51

Habit small, caespitose; ramicauls short, the sheaths neither lepanthiform nor pubescent

39 Sepals connate basally, the laterals with a transverse callus above the base; lip unguicualte; pollinia 2 ..... *Dryadella*
39′ Lateral sepals without a transverse callus above the base 40

40 Sepals variously connate below the apex; petals callous on the labellar half; pollinia 2 ..... *Masdevallia*
40′ Petals not callous on the labellar half 41

41 Sepals coherent or connate at the apex; pollinia 2 42
41′ Sepals free at the apex 43

42 Lip divided into an epichile and an immobile hypochile ..... *Ophidion*
42′ Lip unguiculate, hinged to the column-foot ..... *Pleurothallis*

43 Lateral sepals with a callous pad at the apex; pollinia 2 ..... *Scaphosepalum*
43′ Lateral sepals without a callous pad at the apex 44

44 Petals nearly equal to the sepals in size; pollinia 8 ..... *Octomeria*
44′ Petals distinctly smaller than the sepals 45

45 Lip concave at the base, articulated with the bulbous apex of the column-foot; pollinia 4 ..... *Barbosella*
45′ Lip hinged simply to the column-foot 46

46 Base of the lip cordate or cleft, articulated with a laterally compressed column-foot ..... *Trisetella*
46′ Base of the lip not divided and articulated with a laterally compressed column-foot 47

47 Column footless, the anther and stigma apical, surrounded by a collar ..... *Salpistele*
47′ Column with a short or well-developed foot, the anther and stigma not apical and surrounded by a collar 48

48 Column elongate, the anther and stigma ventral ..... *Pleurothallis*
48′ Column short, the anther and stigma apical 49

49 Column membranous and hooded at the apex, the stigma bilobed ..... *Platystele*
49′ Column stout, not membranous-hooded at the apex 50

50 Petals transverse and callous at the apex ..... *Stelis*
50′ Petals not transverse and callous at the apex ..... *Pleurothallis*

* * *

Habit large, caespitose; ramicauls short, the sheaths neither lepanthiform nor pubescent

51 Leaves thinly coriaceous, carinate: lip divided into an epichile and a cleft hypochile; pollinia 2 ..... *Dracula*
51′ Leaves coriaceous; lip not divided into an epichile and a cleft hypochile 52

52 Lateral sepals with a callous pad at the apex ..... *Scaphosepalum*
52′ Lateral sepals without a callous pad at the apex 53

53 Petals callous along the labellar margin; lip hinged to an incurved extension of the column-foot; pollinia 2 ..... *Masdevallia*
53′ Petals not callous; lip not hinged to an incurved extension of the column-foot 54

54 Petals nearly equal in size to the sepals; pollinia 8 ..... *Octomeria*
54′ Petals distinctly smaller than the sepals; pollinia 2 55

55 Petals transverse and callous at the apex ..... *Stelis*
55′ Petals not transverse and callous at the apex ..... *Pleurothallis*

* * *

Habit caespitose; ramicauls long, the sheaths neither lepanthiform nor pubescent

56 Sepals connate at the apex so that lateral windows are formed between the dorsal sepal and synsepal; pollinia 2 57
56′ Sepals free at the apex 58

57 Lip with a bilobed hypochile, the base connate to the column-foot ..... *Ophidion*
57′ Lip bilobed below the middle, thinly hinged to the column-foot ..... *Zootrophion*

58 Inflorescence 1-flowered 59
58′ Inflorescence racemose; pollinia 2 66

59 Ramicauls enclosed by a series of more or less imbricating sheaths 60
59′ Ramicauls with a sheath near the middle and several at the base 65

60 Lip with a hypochile with a pair of hair-like appendages, connate by an immobile rod to the pedestal-like column-foot; pollinia 4 ..... *Restrepia*
60′ Lip without a pair of hairlike appendages on the hypochile, hinged to the column-foot 61

61 Sepals membranous; pollinia 4 or 8 62
61′ Sepals fleshy; pollinia 2 64

62 Petals nearly equal in size to the sepals; pollinia 8 ..... *Octomeria*
62′ Petals noticeably smaller than the sepals 63

63 Peduncles not elongate; pollinia 4 ..... *Restrepiopsis*
63′ Peduncles elongate; pollinia 8 ..... *Pleurothallopsis*

64 Petals fleshy-thickened, usually at the apex ..... *Myoxanthus*
64′ Petals not fleshy-thickened ..... *Pleurothallis*

65 Pollinia 2 ..... *Pleurothallis*
65′ Pollinia 4 ..... *Restrepiella*

66 Petals transverse and callous at the apex ..... *Stelis*
66′ Petals not transverse and callous at the apex ..... *Pleurothallis*

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TAXONOMY OF THE SUBTRIBE PLEUROTHALLIDINAE

Subtribe **Pleurothallidinae** Lindl., (Edward's Bot. Reg.15: tab.1928, 1829, nomen nudum); Gen. Sp. Orch. Pl. 3, 1830.

Type: *Epidendrum ruscifolium* Jacq., Enum. Pl. Carib. 29, 1760. [*Pleurothallis ruscifolia* (Jacq.) R. Br. in Aiton, Hort. Kew. ed. 2, 5:211, 1813]

Ety.: From the Greek *pleurothallos*, "riblike branches," referring to the caespitose, slender ramicauls seen in *P. ruscifolia* and in much of the rest of the Pleurothallidinae, and *-inae*, the prescribed ending for a subtribe.

Plants perennial, epiphytic to terrestrial. Aerial stems (ramicauls) non-pseudobulbous, unifoliate. Leaf coriaceous, duplicate, articulate. Inflorescence lateral or terminal, single-flowered or racemose. Ovary articulated with the pedicel. Column short or long, the base often developed into a column-foot. Anther dorsal, apical, or ventral; pollinia 2, 4, 6, or 8, spherical to ovoid, with or without a caudicle or a viscidium. Stigma apical or ventral, solitary, either entire or bilobed.

The Genera

Acostaea Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:283, 1923.

Lectotype: *Acostaea costaricensis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:284, 1923. (Index Nom. Gen. 64/24402, 1967)

Ety.: Named in honor of Guillermo Acosta, collector of Costa Rican orchids.

Schlechter described this small genus of diminutive plants from dried material. He noted the broadly winged column with a curved foot to which the petals and remarkable lip are attached, but neither he nor subsequent authors were able to nppreciate the peculiar motility of the lip which can be observed only in living specimens.

Contrary to prior statements (Garay 1974), the flowers are resupinate, and the lip is not balanced so that the weight of an insect would carry it "down" between the columnar wings. In reality, the lip is lowermost and the base is broad and concave under tension with the equally broad apex of the column-foot, much in the way of the folding wings of a paper bird in Japanese origami. A large callus occupies the disc. Somewhere and somehow a stimulus causes the lip to snap suddenly upward to trap the intruder between the columnar wings. After a period of time the pollinator is released as the lip again descends to its former receptive position.

Sensitive lips occur in other tribes of orchids, as well as in two other pleurothallid genera (*Condylago* and *Porroglossum*).

About eight species from Costa Rica, Panama, Colombia and Ecuador constitute the genus. Vegetatively the plants resemble those in several other genera: small caespitose plants with narrowly elliptical leaves produced on short ramicals with an annulus. The flowers are borne in succession in loose racemes that surpass the leaves in length. Two pollinia are present.

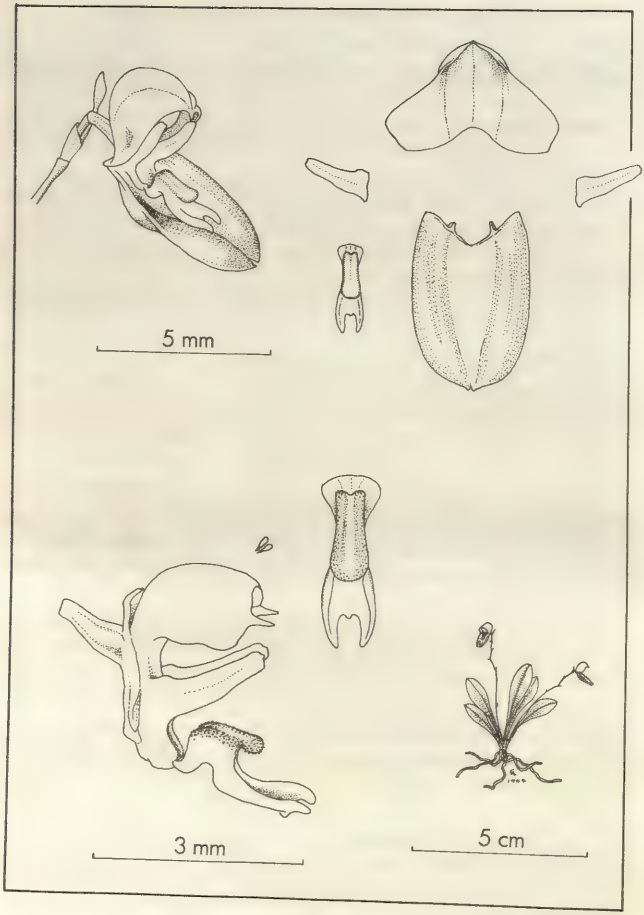

Plate 1. *Acostaea costaricensis* Schltr.

Barbosella Schltr., Repert. Spec. Nov. Regni Veg. 15:259, 1918.
Lectotype: *Pleurothallis gardneri* Lindl., Edward's Bot. Reg. 28: Misc. 83, 1842. [*Barbosella gardneri* (Lindl.) Schltr., Repert. Spec. Nov. Regni Veg. 15:261, 1918] (Luer, Selbyana 5:386, 1981)
Ety.: Named in honor of J. Barbosa Rodrigues, renowned investigator of Brazilian orchids.

This genus consists of about 20 closely allied species widespread from Central America to southern Brazil. The plants, commonly repent but sometimes caespitose, are characterized by short ramicauls, solitary flowers borne by a peduncle that emerges laterally from the ramicaul without an annulus, and a well-developed column with a hooded ventral anther and stigma. Four pollinia are present. The bulbous apex of the stout column-foot articulates with a concavity at the base of the lip like a ball-and-socket joint.

In his revision of the genus *Restrepia* H.B.K. Schlechter (1918) proposed the genus *Barbosella* when he segregated 14 species from *Restrepia* that could no longer be accommodated by his new delimitations for the genus. The earliest species he attributed to the new genus *Barbosella* were *Pleurothallis gardneri* and *P. miersii,* described simultaneously by Lindley in 1842. Most of the species then and since then attributed to *Barbosella* have been related with a ventral anther and stigma, and the typical "socket" articulation of the lip to the column, except for *B. miersii* which has an apical anther and stigma, and a simply hinged lip.

Since Schlechter had designated no type for *Barbosella,* Angely designated a lectotype in 1973, but he chose the only species that did not conform to all the others: *B. miersii.* A new lectotype, *B. gardneri,* was designated in 1981, and the monotypic genus *Barbrodria* was proposed to accommodate *B. miersii.*

Barbrodria Luer, Selbyana 5:386, 1981.
Type: *Pleurothallis miersii* Lindl., Edward's Bot. Reg. 28: Misc. 84, 1842. [*Barbrodria miersii* (Lindl.) Luer, Selbyana 5:386, 1981]
Ety.: Named in honor of J. Barbosa Rodrigues (Barb. Rodr.), author of numerous Brazilian orchid taxa.

This monotypic genus, erected to accommodate one Brazilian species which had been residing in *Barbosella,* may be identified by the minute creeping habit, tiny solitary flowers with a simply hinged lip, a short column with an apical anther and stigma, and four pollinia.

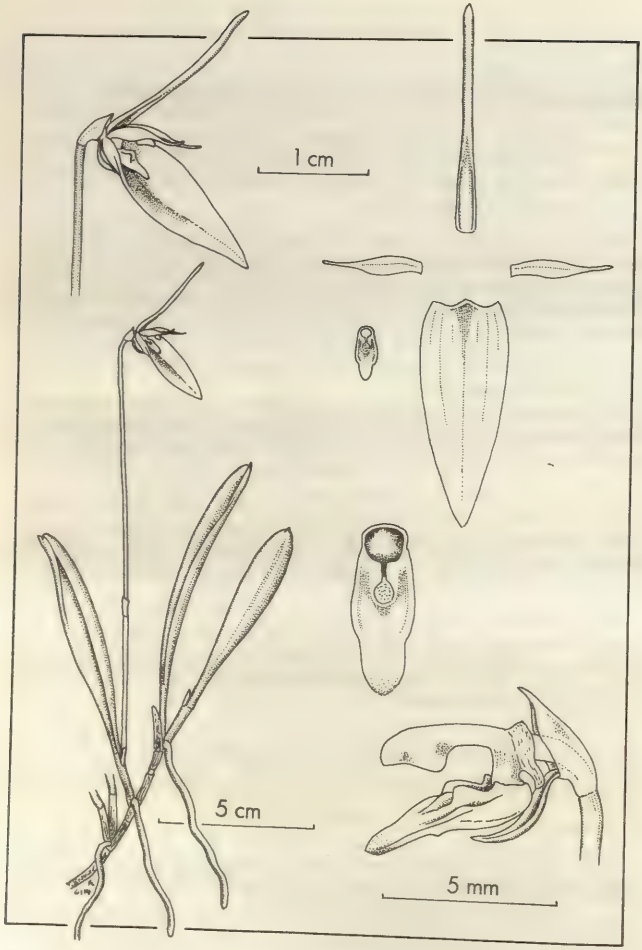

Plate 2. *Barbosella cucullata* (Lindl.) Schltr.

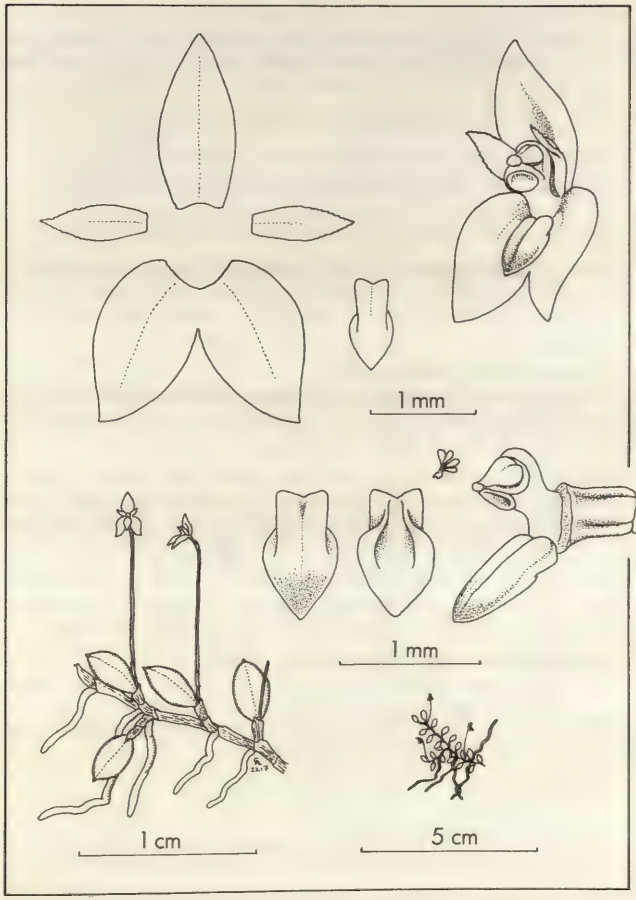

Plate 3. *Barbrodria miersii* (Lindl.) Luer

Brachionidium Lindl., Folia Orchid. *Brachionidium* 1, 1859.
Lectotype: *Restrepia parvifolia* Lindl., Orchid. Lind., 4, 1846. [*Brachionidium parvifolium* (Lindl.) Lindl., Folia Orchid. *Brachionidium* 1, 1859] (Garay, Canad. J. Bot. 34:729, 1956)
Ety.: From the Greek *brachium*, "an arm," and the diminutive ending *-idium*, referring to the stigmatic arms.

Syn.: *Yolanda* Hoehne, Arq. Mus. Nac. Rio de Janeiro 22:72, 1919.
Type: *Yolanda restrepioides* Hoehne, Arq. Mus. Nac. Rio de Janeiro 22:72, 1919.
Ety.: Named in honor of Yolanda, daughter of F. C. Hoehne, Brazilian botanist.

Syn.: *Brachionidium* sect. *Yolanda* (Hoehne) Pabst, Bradea 1(24):269, 1972.
Type: *Yolanda restrepioides* Hoehne, Arq. Mus. Nac. Rio de Janeiro 22:72, 1919.

This genus contains 35 known, interrelated species widespread in Tropical America. The plants are characterized by sheathed, stemlike, branching rhizomes that may creep, ascend or stand erect, and produce at intervals a short, similarly sheathed aerial stem (the ramicaul) and its leaf. The sheaths are usually long-acuminate and glabrous, but in a few species the sheaths are scurfy.

The ephemeral flowers are solitary and non-resupinate with four, free, membranous flower parts: a dorsal synsepal, a ventral middle sepal, and a large pair of petals similar to the sepals. The lip is thick and transverse with a central callus. The column is short and broad with an apical anther and a transverse, apical stigma which is bilobulate. In many instances the lobes appear to be separate, but beneath the rostellar flap the lobes are contiguous, as they are in *Pleurothallis* subgen. *Pleurothallis* and *Stelis*. There are six or eight pollinia (in pairs of three or four) without correlation to any morphological feature. The genus *Yolanda* was based on eight pollinia, but in *B. parvifolium*, the type of the genus, eight (not six, Garay 1956) pollinia are present. Therefore, the proposed section *Yolanda* (Hoehne) Pabst is invalid.

Chamelophyton Garay, Orquideologia 9:115, 1974.
Type: *Restrepia kegelii* Rchb.f., Linnaea 41:133, 1877. [*Chamelophyton kegelii* (Rchb.f.) Garay, Orquideologia 9:115, 1974]
Ety.: From the Greek *chamelophyton*, "a low-growing plant," in reference to the habit of the species.

Syn.: *Garayella* Brieg., Die Orchideen 425, 1975, nom. invalid.
Type: *Pleurothallis hexandra* Garay & Dunsterv., Ven. Orch. Ill. 3:252, 1965. [*Garayella hexandra* (Garay & Dunsterv.) Brieg., Die Orchideen 425, 1975] [*Chamelophyton kegelii* (Rchb.f.) Garay]
Ety.: Named in honor of Leslie A. Garay of the Ames Herbarium, co-author of the synonym *Pleurothallis hexandra*.

The single species of this genus with six pollinia from Venezuela and Guayana was attributed to *Restrepia* by Reichenbach and to *Pleurothallis* by Garay who later erected the genus *Chamelophyton* to accommodate the plant. The plant is very small and creeping with prostrate leaves and solitary flowers. The lateral sepals are connate, the lip is three-lobed, and the column is elongate with a ventral anther and stigma.

Chamelophyton is very closely related to *Pleurothallis* subgen. *Acianthera* sect. *Phloeophilae*, differing only in the number of pollinia.

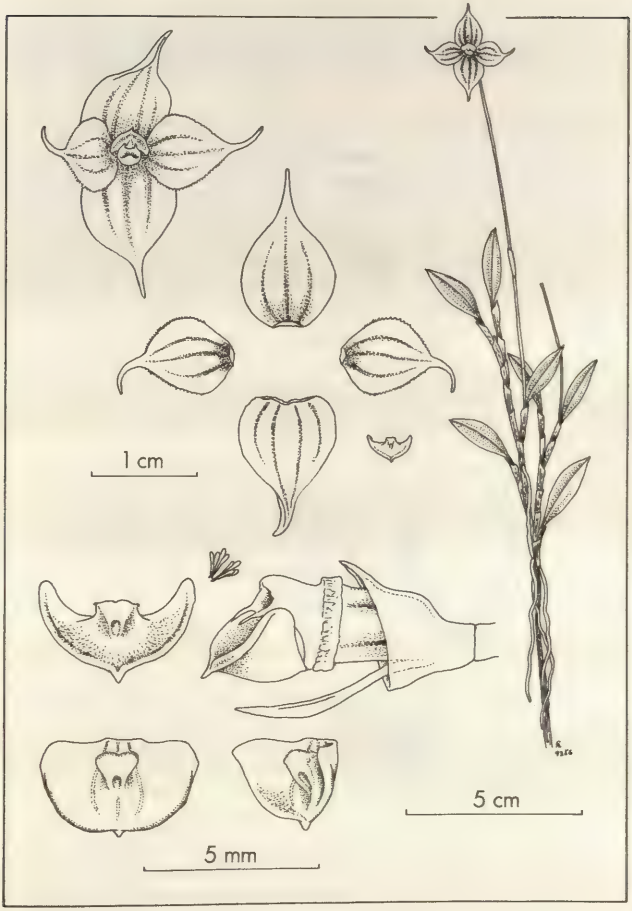

Plate 4. *Brachionidium vasquezii* Luer

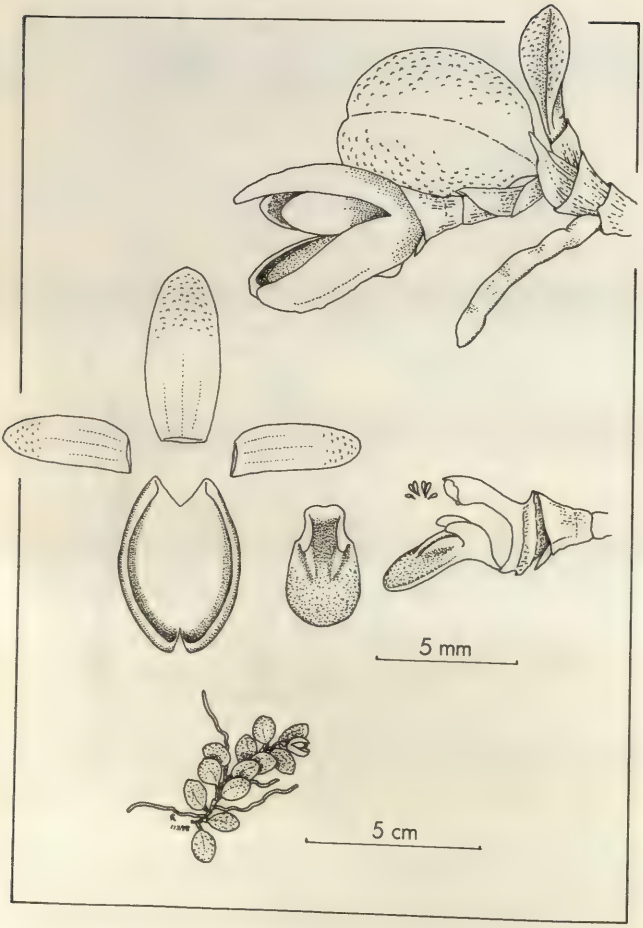

Plate 5. *Chamelophyton kegelii* (Rchb.f.) Garay

Condylago Luer, Orquideologia 15:118, 1982.
Type: *Condylago rodrigoi* Luer, Orquideologia 15:118, 1982.
Ety.: From the Latin *condylus*, "a condyle," in allusion to the articulation of the lip to the column-foot.

This unique monotypic genus was created to accommodate the most recently discovered pleurothallid with an independently evolved sensitive lip. Superficially the species resembles *Pleurothallis flexuosa* Poepp. & Endl. The inflorescence emerges from the short ramicaul with an annulus. The progressively flowered, long, flexuous raceme bears flowers with long, white hairs on the interior of the sepals. The oblong blade of the lip bears a disclike callus near the base above the straplike claw that is attached to the back of the smooth, bulbous apex of the column-foot. Riding with pressure on the front of the bulbous column-foot are a pair of armlike extensions from the base of the blade of the lip that resembles the condyles of a knee joint. Some unknown stimulus causes the condyles to slip suddenly downward on the column-foot causing the blade to snap upward beneath the column. After a period of time the strap pulls the lip back into the exposed position, the condyles now sliding upward on the surface of the column-foot. The column is shallowly winged with a ventral anther and two pollinia.

Dracula Luer, Selbyana 2:190, 1978.
Type: *Masdevallia chimaera* Rchb.f., Gard. Chron. 463, 1872. [*Dracula chimaera* (Rchb.f.) Luer, Selbyana 2:194, 1978]
Ety.: From the Latin *dracula*, "a little dragon," in allusion to the fancied appearance of the flowers.

Syn.: *Masdevallia* sect. *Saccilabiatae* Rchb.f., Gard. Chron. 1238, 1873.
Lectotype here designated: *Masdevallia chimaera* Rchb.f., Gard. Chron. 463, 1872.
Ety.: From the Latin *saccus*, "a sack," and *labiatus*, "lipped," referring to the saccate epichile of the lip.

Syn.: *Masdevallia* sect. *Chimaeroideae* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:125, 1925.
Type: *Masdevallia chimaera* Rchb. f., Gard. Chron. 463, 1872.
Ety.: From the species *chimaera* and the Greek ending *-oideus*, referring to the similarity to *M. chimaera*.

Originally attributed to *Masdevallia*, apparently because of the sepaline tails, the species of *Dracula* constitute a well-defined taxon, as unrelated to *Masdevallia* as they are unrelated to any other pleurothallid genus. Over 80 species are known from Central America and the northwestern Andes.

The comparatively thin, sometimes even plicate leaves with a sharply defined midrib are borne by a shorter ramicaul. The flowers with long-tailed sepals are borne singly or successively in commonly pendent racemes, which originate from the ramicaul with an annulus a considerable distance below the abscission layer. The small, unique petals that flank the column are thickened apically, usually verrucose between a pair of valvelike laminae. The extraordinary lip is clearly divided into a cleft hypochile and a more or less rounded, concave epichile that is often coursed by lamellate, radiating "veins." The concave base is hinged to the stout column-foot, but in a few species the attachment becomes immobile with adnation of the base to the column-foot. The column is well-developed, semiterete with a hooded ventral anther and stigma, and a short, thick foot. Two pollinia are present.

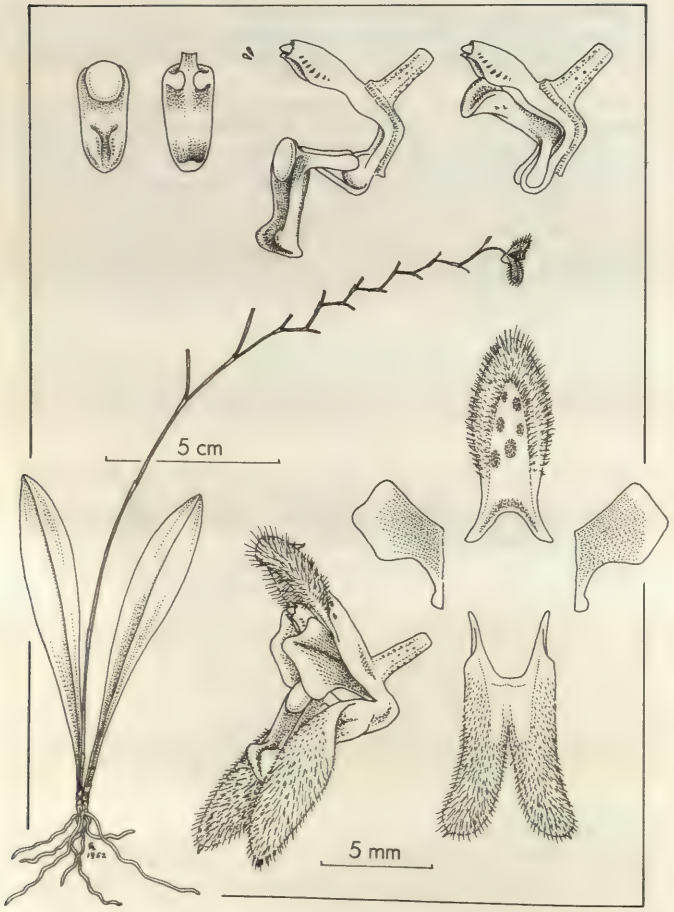

Plate 6. *Condylago rodrigoi* Luer

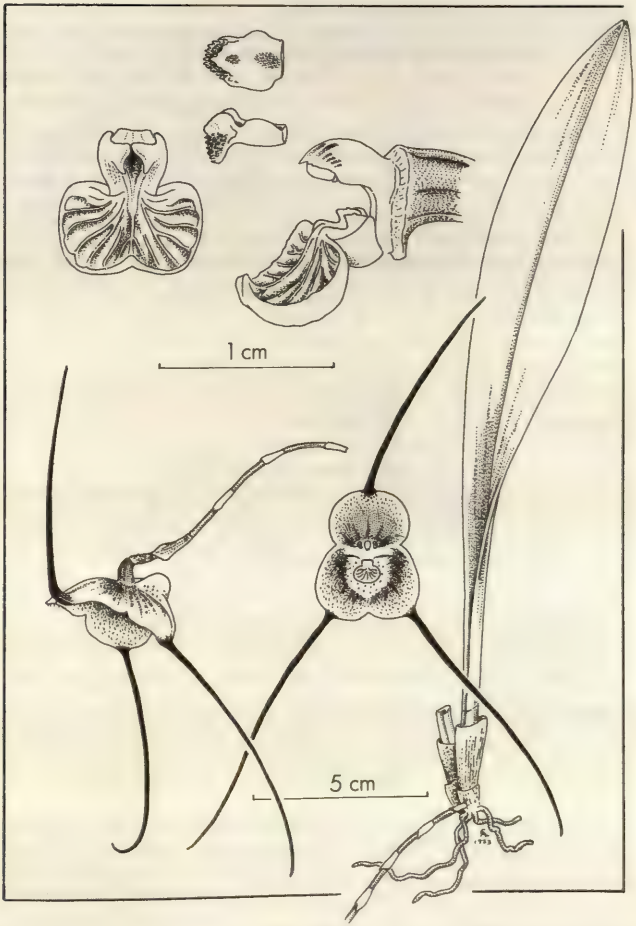

Plate 7. *Dracula radiosa* (Rchb.f.) Luer

Dresslerella Luer, Selbyana 3:1, 1976.
Type: *Pleurothalis pertusa* Dressler, Orquideologia 5:76, 1970. [*Dresslerella pertusa* (Dressler) Luer, Selbyana 3:6, 1976]
Ety.: Named in honor of R. L. Dressler of the Smithsonian Tropical Research Institute, foremost investigator of the Orchidaceae.

This genus of eight species from Central America and northwestern South America is characterized by the more or less pubescent leaves and cauline sheaths. The leaves of some species are merely minutely ciliate while those of other species may be covered by a dense mat of long hairs. The leaves are thick and heavy, often growing prostrate to form leafy rosettes. The ramicauls are commonly shorter than the leaf, and the inflorescence emerges without an annulus from the apex of the ramicaul at the abscission layer with the sessile leaf. The solitary flowers are fleshy with the ovary and sepals pubescent. The column is elongate and denticulate at the hooded apex. The ventral anther contains a pair of large pollinia flanked to either side by a smaller pollinium for a total of four.

Dryadella Luer, Selbyana 2:207, 1978.
Type: *Masdevallia elata* Luer, Phytologia 39:199, 1978. [*Dryadella elata* (Luer) Luer, Selbyana 2:206, 1978]
Ety.: Named for the *dryads*, the nymphs of trees and forests of classical mythology.

Syn.: *Masdevallia* sect. *Saltatrices* sensu Woolward, The Genus *Masdevallia* sect. XII, 1896, non Rchb.f., Linnaea 41:10, 1877.

Syn.: *Masdevallia* subgen. *Trigonanthe* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 35:48, 1925, nomen nudum.
Lectotype here designated: *Masdevallia simula* Rchb.f., Gard. Chron. 1:8, 1875.
Ety.: From the Greek *trigonanthos*, "a triangular flower," referring to the shape of the flower.

Syn.: *Masdevallia* sect. *Rhombopetalae* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:188, 1925.
Lectotype here designated: *Masdevallia simula* Rchb.f., Gard. Chron. 1:8, 1875.
Ety.: From the Greek *rhombopetalon*, "a rhombus-shaped petal," referring to the shape of the petals.

Syn.: *Trigonanthe* (Schltr.) Brieg., Die Orchideen 448, 1975, nom. invalid.
Lectotype here designated: *Masdevallia simula* Rchb.f., Gard. Chron. 1:8, 1875.

The 40 species of this genus distributed from Guatemala to southern Brazil long resided in *Masdevallia* where they had been assigned because of their superficial similarity. Vegetatively they are tufted little plants with narrow, fleshy leaves with short ramicauls. The little flowers are produced singly or successively in short racemes from an annulus. The commonly caudate sepals are connate basally into a gaping cup. Where the lateral sepals are deflexed from the cup above the base, a transverse callus like a transverse fold, extends across the width of the sepals so that the petals and lip above protrude over the "dam." The petals are short, broad and multi-angled. The bicallous blade of the lip is hinged to the column-foot by a long, slender claw. The column is broadly winged and hooded with a ventral anther and stigma. There are two pollinia.

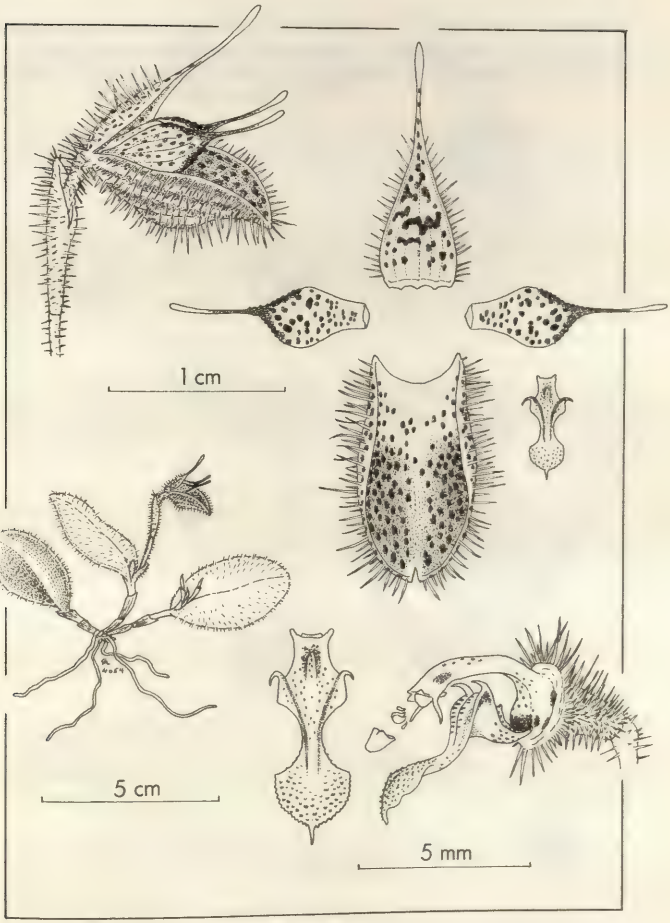

Plate 8. *Dresslerella hirsutissima* (C. Schweinf.) Luer

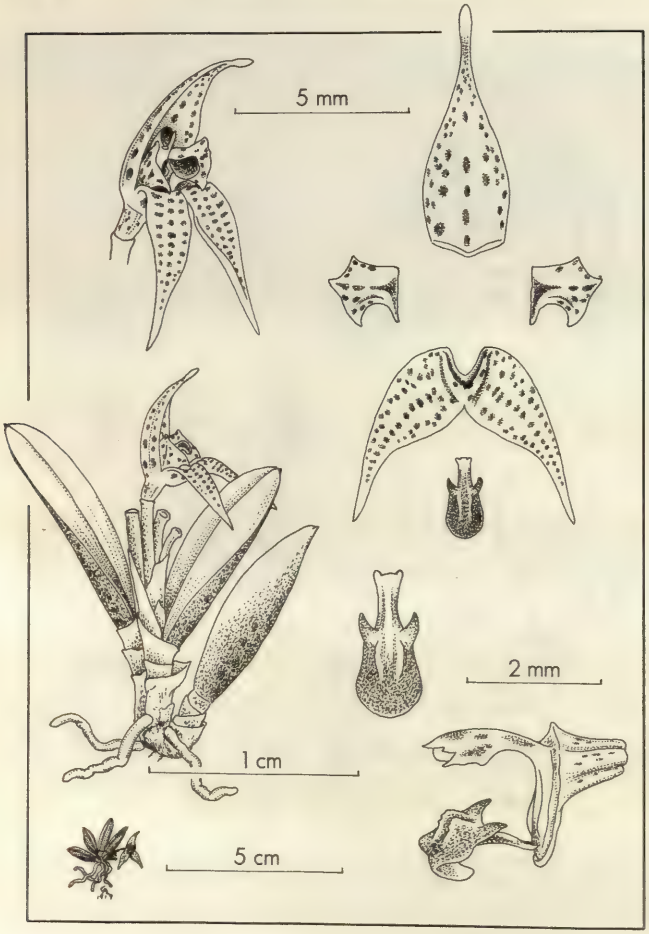

Plate 9. *Dryadella minuscula* Luer & Escobar

Frondaria Luer, gen. nov.
Type: *Pleurothallis caulescens* Lindl., J. Bot. (Hooker) 1:9, 1834.
Ety.: From the Latin *frons*, "a leafy bough," referring to the leaflike sheaths of the ramicaul.

Syn.: *Pleurothallis* sect. *Caulescentes* Lindl., Folia Orch. *Pleuroth.* 44, 1859.
Type: *Pleurothallis caulescens* Lindl., J. Bot. (Hooker) 1:9, 1834.
Ety.: From the Latin *caulescens*, "becoming stemlike," referring to the habit of the plant.

Planta parva caespitosa ramicaulibus gracilibus apice unifoliatis. Vaginae ramicaulium foliaceae. Inflorescentia racemosa. Sepala petalaque libera acuta. Columna brevis apice pedis liberi. Anthera stigmaque apicales pollinis duobus sphaericis nudis.

This species proposed here as a monotypic genus is unique in the Pleurothallidinae because of the leaflike sheaths of the ramicaul. The slender ramicaul, terminated by a single leaf with an abscission layer, is enclosed by a series of close, imbricating, tubular sheaths with oblique ostia, and with coriaceous, elliptical apices that resemble the terminal leaf but without an abscission layer. The margins of some of the sheath-blades are cellular-papular, suggesting a precursor to cilia.

The simultaneously flowered raceme emerges from the ramicaul with an annulus below the abscission layer. The essentially free sepals and petals are acute, and the lip is three-lobed. The column is short with an apical anther and stigma. The two pollinia are spherical without caudicles.

This species is fairly frequent at high altitudes (2500- 3000 meters above sea level) from central Colombia to central Bolivia.

Species: **Frondaria caulescens** (Lindl.) Luer, comb. nov.
Bas.: *Pleurothallis caulescens* Lindl., J. Bot. (Hooker) 1:9, 1834.
Syn.: *Humboldtia caulescens* (Lindl.) Kuntze, Rev. Gen. Pl. 2:667, 1891.
Pleurothallis graminea Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9:74, 1921.

Lepanthes Sw., Nov. Act. Soc. Sci. Upsala 6:85, 1799.
Type: *Lepanthes concinna* Sw., Nov. Act. Soc. Sci. Upsala 6:85, 1799, nomen illeg. (Britton & Wilson, Sci. Surv. Porto Rico 5:206, 1924) (*Epidendrum ovale* Sw., Prodr. 125, 1788)
Ety.: From the Greek *lepis*, "a scale," and *anthos*, "a flower," referring to the small, "scalelike" flowers.

This large genus, probably containing 600 or more species, is widely distributed in the Antilles and from Mexico through Bolivia. Extremely few species are known from Brazil. Some species are widespread, but many are restricted to localized areas. Many species of *Pleurothallis* were described in *Lepanthes* by Barbosa Rodrigues.

It is this genus from which the concept of "lepanthiform" sheaths has been derived. Typically, the ramicauls are enclosed by a series of tubular, ribbed, more or less imbricating sheaths with oblique, dilated, margined ostia, and the ribs and margins of the ostia are grossly or

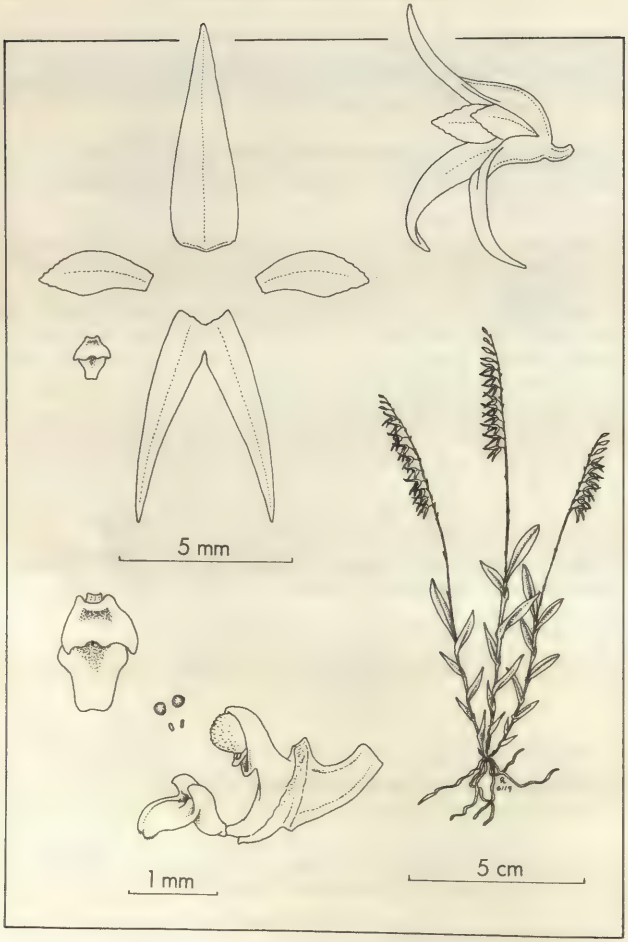

Plate 10. *Frondaria caulescens* (Lindl.) Luer

microscopically ciliate or scabrous, occasionally glabrous. The flowers, usually produced successively in racemes with an annulus near the apex of the ramicaul, are delicate, membranous and multicolored. The petals and lip are commonly transversely lobed. The lip is usually so highly specialized that its own terminology is required. The middle lobe is commonly represented by an intricately sculpted, microscopic appendix. The base of the lip is connate to the under surface and often near the base of a footless column. The anther with a pair of pollinia is dorsal or apical, and the stigma is apical, subapical or ventral.

Four subgenera may be recognized. *Salpistele* could possibly be conceived as a fifth, but the non-lepanthiform sheaths coupled with the unique collar surrounding the apical anther and stigma seem sufficient to maintain it as a genus.

KEY TO THE SUBGENERA AND SECTIONS OF *LEPANTHES*

1 Rhizome long-repent, prostrate to pendent ..... subgen. *Brachycladium*
1′ Rhizome short-repent or caespitose, erect if prolific 2

2 Lip transversely bilobed, the lateral lobes distinctly modified into blades, the middle lobe almost always modified into an appendix ..... subgen. *Lepanthes* sect. *Lepanthes*
2′ Lip entire to transversely bilobed, the apex acute, obtuse, round to retuse; if bilobed, the lateral lobes may be thickened on the margins, but not modified into blades 3

3 Petals membranous, entire or transversely lobed; lip membranous ..... subgen. *Lepanthes* sect. *Haplocheilus*
3′ Petals fleshy, entire; lip fleshy; if lobed, not divided into laminae 4

4 Petals broader than long; lip ovate ..... subgen. *Marsipanthes* sect. *Caprimulginae*
4′ Petals linear 5

5 Lip transversely oblong ..... subgen. *Marsipanthes* sect. *Felinae*
5′ Lip bilobed, the lobes elongate 6

6 Lip deeply bilobed, the lobes elongate ..... subgen. *Marsipanthes* sect. *Marsipanthes*
6′ Lip not deeply bilobed, the sides enclosing the column ..... subgen. *Draconanthes*

Lepanthes subgen. **Brachycladium** Luer, nom. nov.

Type: *Lepanthes nummularia* Rchb.f., Xenia Orch. 1:142, 1858.

Ety.: From the Greek *brachyclados*, "a short branch," referring to the short ramicauls.

Syn.: *Lepanthes* sect. *Brachyclada* Rchb.f., Xenia Orchidaceae 1:142, 1858.
Type: *Lepanthes nummularia* Rchb.f., Xenia Orch. 1:142, 1858.

The 20 species of this subgenus, distributed in the Andes from Colombia to central Bolivia, are readily recognized by the repent, pendent habit. Long, hanging chains or sometimes mats of little, distichous leaves are commonly formed. They resemble some species of *Peperomia* or *Trichosalpinx*, e.g., *T. microcharis* (Schltr.) Luer. The flowers are produced singly or successively from short, congested racemes. The flower parts are variable, compatible with both *L.* sect. *Lepanthes* and sect. *Haplocheilus*.

Lepanthes subgen. **Draconanthes** Luer, subgen nov.

Type: *Lepanthes aberrans* Schltr., Repert. Spec. Nov. Regni Veg. 14:125, 1915.

Ety.: From the Greek *drakonanthos,* "dragon-flower," referring to the fancied appearance of the flower.

Plantae mediocres vaginis ramicaulium lepanthiformibus. Sepala plus minusve verrucosa. Petala linearia. Labellum crassum unguiculatum lobis lateralibus columnam elongatum amplectentibus.

This subgenus consists of four allied Andean species of high altitudes that differ from all other species of *Lepanthes* in the verrucose flowers with linear petals and fleshy, verrucose lips with lateral lobes surrounding a slender column. Three of the four species have calli protruding down from the under surface of the lip. The unguiculate base of the lip is connate to the under surface of the base of the slender column.

Lepanthes subgen. **Lepanthes**

The vast majority of the species belong to this subgenus which may be divided into two sections according to the modifications of the lip. Otherwise, the species are not readily divisible into related groups.

Lepanthes subgen. **Lepanthes** sect. **Haplocheilus** Fawc. & Rendle, Orchids of Jamaica 68, Dec. 1910*.

Lectotype here designated: *Lepanthes brevipetala* Fawc. & Rendle, J. Bot. 47:5, 1909.

Ety.: From the Greek *haplocheilos,* "a single lip," referring to the undivided lip.

Syn.: *Lepanthes* sect. *Fawcelepanthes* Cogn. Orch. Antill. 434, 24 Dec. 1910.
Lectotype here designated: *Lepanthes brevipetala* Fawc. & Rendle, J. Bot. 47:5, 1909.
Ety.: Named in honor of William Fawcett, investigator of the Orchidaceae of Jamaica.

The lips of the species of this section are entire or lobed, but if lobed, the margins not modified into blades, or laminae, and no appendix is present. Unfortunately, these features are not always easily determined. The margins of the lobes are sometimes thickened so that they could be interpreted as being thick, ill-defined laminae. Sometimes a distinctly bilobed lip will have a middle lobe that could be called an appendix.

Lepanthes subgen. **Lepanthes** sect. **Lepanthes**

Syn.: *Lepanthes* sect. *Macrocladae* Rchb.f., Xenia Orchidaceae 1:143, 1858.
Lectotype here designated: *Epidendrum ovale* Sw., Prodr. 125, 1788. (*Lepanthes concinna* Sw.) [*Lepanthes ovalis* (Sw.) Fawc. & Rendle]
Ety.: From the Greek *makrocladium,* "a long branch," referring to the length of the ramicauls.

Syn.: *Lepanthes* sect. *Diplocheilus* Fawc. & Rendle, Orchids of Jamaica 67, Dec. 1910*.
Lectotype here designated: *Epidendrum ovale* Sw., Prodr. 125, 1788. (*Lepanthes concinna* Sw.) [*Lepanthes ovalis* (Sw.) Fawc. & Rendle]
Ety.: From the Greek *diplocheilos,* "a double lip," referring to the two-parted labellum.

Syn.: *Lepanthes* sect. *Rendlepanthes* Cogn., Orch. Antill. 435, 1910.
Lectotype here designated: *Epidendrum ovale* Sw., Prodr. 125, 1788. (*Lepanthes concinna* Sw.) [*Lepanthes ovalis* (Sw.) Fawc. & Rendle]
Ety.: Named in honor of Alfred Rendle, investigator of the Orchidaceae of Jamaica.

*The dates of publication of both the *Orchids of Jamaica* by Fawcett and Rendle, and the *Orchidaceae* by Cogniaux in *Symbolae Antillanae* are December 1910, but the day 24 Dec. is given for the latter, and none for the former. Since the probability is far greater that the *Orchids of Jamaica* appeared before the 24th, I have chosen to give priority to the *Orchids of Jamaica.*

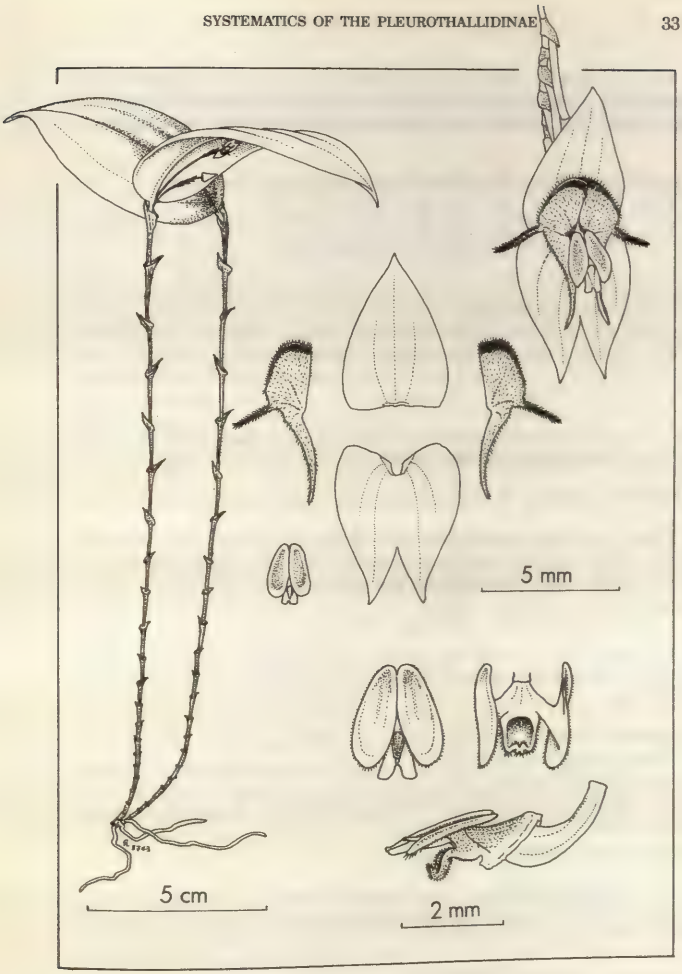

Plate 11. *Lepanthes posadae* Luer & Escobar

The lips of the species of this section are lobed, the lateral lobes distinctly modified into blades that are carried to either side of or above the column. The middle lobe, if present, is modified into an appendix.

Lepanthes subgen. **Marsipanthes** Luer, subgen. nov.
Type: *Lepanthes ribes* Luer, Selbyana 3:14, 1976.
Ety.: From the Greek *marsipos,* "a pouch," and *anthos,* "a flower," referring to the pouchlike sepaline cup.

Plantae parvae vel mediocres vaginis ramicaulium lepanthiformibus. Sepala in cupulam suborbiculatam profunde connata. Petala carnosa integra. Labellum carnosum ovatum vel bilobatum apice breviter acutum.

This subgenus consists of three widely separated, probably not closely related species, that are brought together by their suborbicular sepaline cups. Each may be considered to represent a monotypic section. Each is distinguished by the morphology of the fleshy petals and lip. They are not related to the species of *L.* sect. *Lepanthes* that also have inflated, deeply connate sepals.

Lepanthes subgen. **Marsipanthes** sect. **Caprimulginae** Luer, sect. nov.
Type: *Lepanthes caprimulgus* Luer, Selbyana 3:12, 1976.
Ety.: Named for *Caprimulgus,* the genus of night hawks, in reference to the appearance of the flower.

Petala latiora quam longiora. Labellum ovatum.

The species from northcentral Peru that constitutes this monotypic section is distinguished by the petals that are wider than long, and an ovate lip.

Lepanthes subgen. **Marsipanthes** sect. **Felinae** Luer, sect. nov.
Type: *Lepanthes felis* Luer & Escobar, Amer. Orchid Soc. Bull. 52:1264, 1983.
Ety.: From the Latin *felis,* "the cat," referring to the fancied appearance of the flower.

Petala linearia. Labellum transverse oblongum.

The single species from the Western Cordillera of Colombia that comprises this section is distinguished by the linear petals and a transversely oblong lip.

Lepanthes subgen. **Marsipanthes** sect. **Marsipanthes** Luer, sect. nov.
Type: *Lepanthes ribes* Luer, Selbyana 3:14, 1976.

Petala linearia. Labellum bilobatum lobis elongatis.

The species from central western Ecuador that constitutes this monotypic section is distinguished by the linear petals and the lip with elongated lateral lobes.

Lepanthopsis (Cogn.) Ames, Bot. Mus. Leafl. 1(9):3, 1933.
Type: *Pleurothallis floripecten* Rchb.f., Bonplandia 2:25, 1854. [*Lepanthopsis floripecten* (Rchb.f.) Ames, Bot. Mus. Leafl. 1(9):11, 1923]
Ety.: From the genus *Lepanthes* and the Greek *-opsis*, "similar to," referring to the similarity of the species to *Lepanthes*.

Bas.: *Pleurothallis* sect. *Lepanthopsis* Cogn., Fl. Bras. 3(4):381, 1896.
Lectotype: *Pleurothallis lateralis* Cogn., Fl. Bras. 3(4):592, 1896. [*Lepanthopsis floripecten* (Rchb. f.) Ames] (Garay, Orquideología 9:116, 1974)

Lepanthopsis was first recognized as a section of two species of *Pleurothallis* by Cogniaux. Ames elevated the taxon to the rank of genus 37 years later by which time five species were known. Over 25 mostly Andean and Caribbean species are known today.

The distinctive features are the lepanthiform sheaths of the ramicauls, and the small flowers with a short column with an apical anther and an apical, bilobed stigma. Two pollinia are present.

Some species of the Caribbean grade into *Trichosalpinx*.

Masdevallia Ruíz & Pav., Fl. Peruv. Chil. Prodr. 112, 1794.
Type: *Masdevallia uniflora* Ruíz & Pav., Syst. Veg. 238, 1798.
Ety.: Named for José Masdevall, physician in the court of Charles III of Spain.

Syn.: *Luerella* Braas, Die Orchidee 30:108, 1979.
Type: *Masdevallia pelecaniceps* Luer, Selbyana 3:22, 1976.
Ety.: Named for C. Luer who described the species.

Syn.: *Rodrigoa* Braas, Die Orchidee 30:203, 1979.
Type: *Masdevallia meleagris* Lindl., Ann. Mag. Nat. Hist. ser. 1, 15:257, 1845.
Ety.: Named for Rodrigo Escobar of Medellín, Colombia.

This polymorphic genus of about 350 species is widely distributed from Mexico to southern Brazil. The coriaceous leaves are borne by short ramicauls and the inflorescence emerges with an annulus a considerable distance below the abscission layer. The sepals are variously connate and commonly with tails. The petals are small with a callous margin often developed into a tooth. The lip is more or less ligulate and hinged to an incurved extension from the apex of the column-foot. The column is terete with a hooded ventral anther with two pollinia.

The five subgenera and 17 sections are described in the *Systematics of the Genus Masdevallia* (Luer 1986).

Myoxanthus Poepp. & Endl., Nov. Gen. Sp. Pl. 1:50, 1835.
Type: *Myoxanthus monophyllus* Poepp. & Endl., Nov. Gen. Sp. Pl. 1:50, 1835.
Ety.: From the Greek *myoxos*, "a dormouse," and *anthos*, "a flower," referring to some quality of the flower.

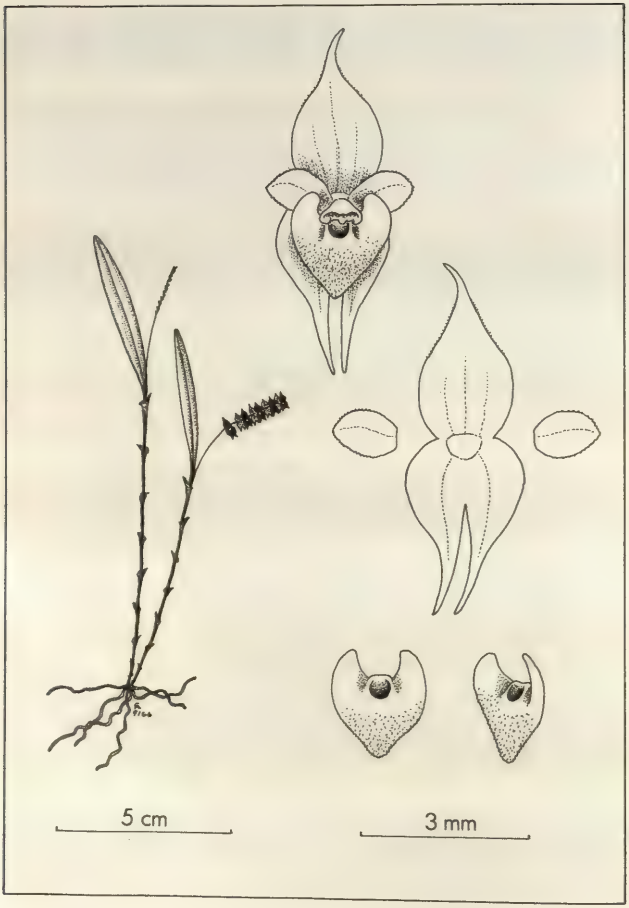

Plate 12. *Lepanthopsis acetabulum* Luer

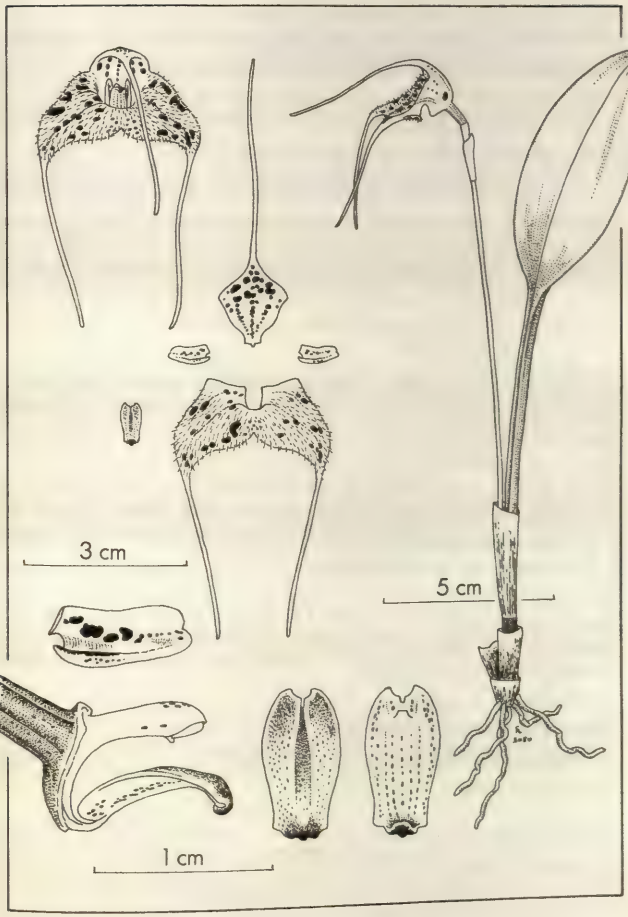

Plate 13. *Masdevallia affinis* Lindl.

Syn.: *Duboisia* Karst., Allg. Gartenzeitung 15:394, 1847, non R. Br. 1810.
Type: *Duboisia reymondii* Karst., Allg. Gartenzeitung 15:394, 1847. [*Myoxanthus reymondii* (Karst.) Luer, Selbyana 7:49, 1982]
Ety.: Named in honor of Dr. Du Bois Reymond, French physicist.

Syn.: *Dubois-Reymondia* Karst., Bot. Zeitung (Berlin) 6:397, 1848.
Type: *Dubois-Reymondia palpigera* Karst., Bot. Zeitung (Berlin) 6:398, 1848. [*Myoxanthus reymondia* (Karst.) Luer]

Syn.: *Chaetocephala* Barb. Rodr., Gen. Sp. Orch. Nov. 2:37, 1882.
Lectotype: *Chaetocephala punctata* Barb. Rodr. Gen. Sp. Orch. Nov. 2:38, 1882. (Index Gen. 64/15508) [*Myoxanthus punctatus* (Barb. Rodr.) Luer, Selbyana 7:49, 1982]
Ety.: From the Greek *chaete*, "hair," and *cephale*, "head," referring to the hairs on the anther cap.

Syn.: *Pleurothallis* sect. *Chaetocephala* (Barb. Rodr.) Cogn., Fl. Bras. 3(4):589, 1896.
Lectotype here designated: *Chaetocephala punctata* Barb. Rodr., Gen. Sp. Orch. Nov. 2:38, 1882.

Syn.: *Reymondia* Karst. & Kuntze, Lex. Gen. Phan. 481, 1903.
Type: *Duboisia reymondii* Karst.

This polymorphic genus of about 40 species is widely distributed in Central and South America. It is most closely allied to *Pleurothallis* subgen. *Acianthera* and genus *Restrepiella*. The sheaths of the ramicauls, often loose and easily shed, are often hispidulous. The rhizome may be repent and the ramicaul may be prolific. The flowers are produced singly, successively or simultaneously, sometimes in large numbers in a fascicle, usually from near the apex of the ramicaul, but sometimes low on the ramicaul or even from the rhizome. In all cases the inflorescence emerges without an annulus.

The flowers are fleshy, often pubescent, and the lateral sepals may be connate or free. The petals are variously thickened, the apices sometimes developed into osmophores. The lips are polymorphic. The well-developed column is variously winged or toothed, partially covering the ventral anther. The anther cap is sometimes spiculate on the upper margin. There are two pollinia.

The following species are transferred from *Pleurothallis:*

Myoxanthus aspasicensis (Rchb.f.) Luer, comb. nov.
Pleurothallis aspasicensis Rchb.f., Bonplandia 3:73, 1855.
Pleurothallis alexandrae Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:103, 1923.

Myoxanthus lappiformis (Heller & L.O.Wms) Luer, comb nov.
Pleurothallis lappiformis Heller & L.O.Wms., Fieldiana, Bot. 31:42, 1964.

Myoxanthus pan (Luer) Luer, comb. nov.
Pleurothallis pan Luer, Selbyana 3:360, 1976.

Myoxanthus pastacensis (Luer) Luer, comb. nov.
Pleurothallis pastacensis Luer, Selbyana 3:156, 1976.

Myoxanthus sempergemmatus (Luer) Luer, comb. nov.
Pleurothallis sempergemmata Luer, Selbyana 3:386, 1976.

Myoxanthus spilanthus (Barb. Rodr.) Luer, comb. nov.
Pleurothallis spilantha Barb. Rodr., Gen. Spec. Orch. Nov. 2:32, 1882.
Pleurothallis paspaliformes Loefgren, Arch. Jard. Bot. Rio de Janeiro 2:53, 1918.

Myoxanthus stonei (Luer) Luer, comb. nov.
Pleurothallis stonei Luer, Phytologia 44:171, 1979.

Myoxanthus uncinatus (Fawc.) Luer, comb. nov.
Pleurothallis uncinata Fawc., J. Bot. 33:12, 1895.

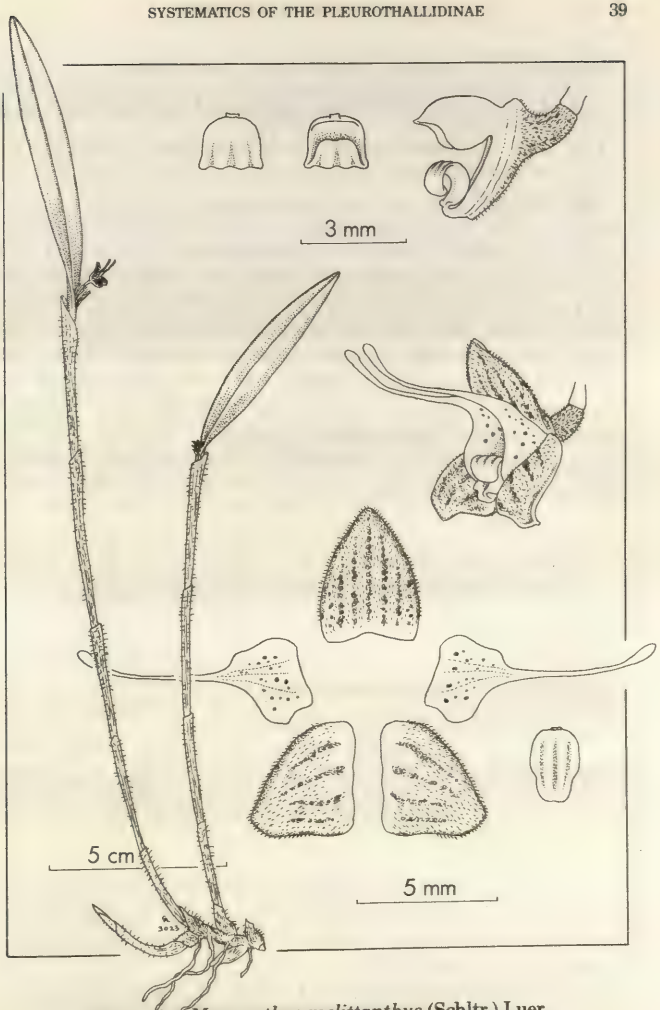

Plate 14. *Myoxanthus melittanthus* (Schltr.) Luer

Octomeria R. Br. in Aiton, Hort. Kew. ed. 2, 5:211, 1813.

Type: *Epidendrum graminifolium* L., Sp. Pl. ed. 2, 1363, 1763. [*Octomeria graminifolia* (L.) R. Br. in Aiton, Hort. Kew. ed. 2, 5:211, 1813]

Ety.: From the Greek *oktomeros,* "with eight parts," referring to the eight pollinia.

This genus of about 150 species is widely distributed in the American tropics, but the greatest concentration occurs in southern Brazil. The habit of the plants is variable, but all species are characterized by a fascicle of single flowers emerging laterally in a fascicle from near the apex of the ramicaul without an annulus. The sepals are usually equal and free, but in a few species the lateral sepals are partially or nearly wholly connate. The petals are large and membranous, similar to the sepals. The lip is usually variously lobed below the middle with a pair of carinae on the disc, and the base is hinged to the column-foot. Many of the lips are similar to those of *Restrepiopsis* and *Pleurothallopsis.* The column is semiterete, short or long, usually with a subapical anther and stigma. Eight pollinia are present.

Two sections have been recognized by Cogniaux (1896), based on whether the leaves are flat or terete. He has also divided both sections into two subsections on the basis of connation of the lateral sepals.

KEY TO THE SECTIONS AND SUBSECTIONS OF *OCTOMERIA.*

1 Leaves flat ..... (sect. *Octomeria*) 2
1′ Leaves terete ..... (sect. *Teretifoliae*) 3

2 Plant medium in size to large; ramicauls elongate; lateral sepals free ..... subsect. *Octomeria*
2′ Plant small; ramicauls abbreviated; lateral sepals more or less connate ..... subsect. *Pusillae*

3 Lateral sepals connate ..... subsect. *Leptophyllae*
3′ Lateral sepals free ..... subsect. *Scirpoideae*

Octomeria sect. **Octomeria**

Type: *Epidendrum graminifolium* L., Sp. Pl. ed. 2, 1353, 1763.

The majority of the species are included in this section. The blades of the thinly to thickly coriaceus leaves are duplicate, more or less flat, and borne by short to long ramicauls, repent or caespitose.

Cogniaux (1896) recognizes two subsections.

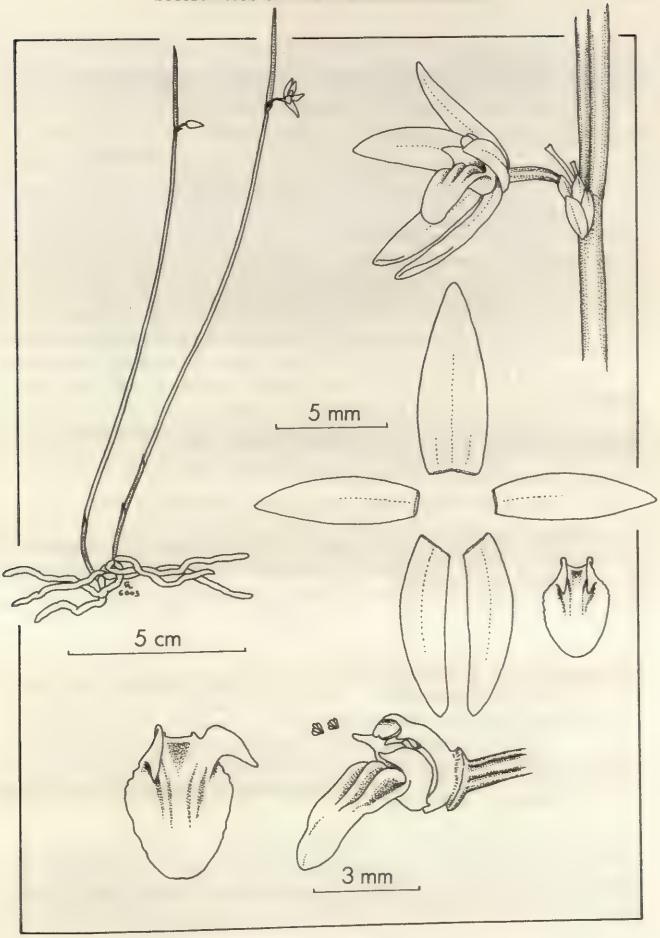

Plate 15. *Octomeria brevifolia* Cogn.

Subsect. **Octomeria**
Type: *Epidendrum graminifolium* L., Sp. Pl. ed. 2, 1353, 1763.

Syn.: *Enothrea* Raf., Fl. Tellur. 4:43, 1836, nom. illeg.
Type: *Epidendrum graminifolium* L., Sp. Pl. ed. 2:1353, 1763.
Ety.: Named for a supposed nymph called Enothrea.

Syn.: *Octomeria* sect. *Planifoliae* Barb. Rodr., Gen. Sp. Orch. Nov. 2:96, 1882.
Lectotype here designated: *Octomeria robusta* Barb. Rodr., Gen. Sp. Orch. Pl. 2:97, 1882, non Rchb. & Warsc. 1881. (*Octomeria grandiflora* Lindl., Edward's Bot. Reg. 28:Misc. 64, 1842)
Ety.: From the Latin *planifolius,* "flat-leaved," referring to the shape of the leaves.

Syn.: *Octomeria* sect. *Octomeria* subsect. *Majores* Cogniaux, Fl. Bras. 3(4):601, 1896.
Lectotype here designated. *Epidendrum graminifolium.*
Ety.: From the Latin *major,* "larger," referring to the habit.

The majority of the species of the genus are included in this subsection. They are characterized by their size noticeably larger than that of the species of the other subsection, elongate ramicauls, and free lateral sepals.

Subsect. **Pusillae** Cogniaux, Fl. Bras. 3(4):601, 1896.
Lectotype here designated: *Octomeria rubrifolia* Barb. Rodr., Gen. Spec. Orch. Nov. 1:31, 1877.
Ety.: From the Latin *pusilla,* "very small," referring to the habit.

Cogniaux included only four species in this subsection characterized by the small habit of the species, abbreviated ramicauls, and more or less connate lateral sepals.

Octomeria sect. **Teretifoliae** Barb. Rodr., Gen. Sp. Orch. Nov. 2:96, 1882, as **Teretefolia.**
Type: *Octomeria teretifolia* Barb. Rodr., Gen. Sp. Orch. Nov. 1:32, 1877, as *teretefolia,* non Lodd. (*Octomeria leptophylla* Barb. Rodr., Gen. Sp. Orch. Nov. 2:112, 1882)
Ety.: From the Latin *teretifolius,* "terete-leaved," referring to the shape of the leaves.

This section contains those species with terete or semiterete leaves borne by short to long ramicauls, and either repent or caespitose. In some species the thick leaves are broad, making the boundary between the two sections indistinct. Cogniaux divided the section into two subsections.

Subsect. **Leptophyllae** Cogn., Fl. Bras. 3(4):601, 1896.
Type: *Octomeria leptophylla* Barb. Rodr., Gen. Sp. Orch. Nov. 2:112, 1882.
Ety.: From the Greek *leptophyllon,* " a slender leaf," referring to the shape of the leaf.

Only in this one species are the lateral sepals connate.

Subsect. **Scirpoideae** Cogn., Fl. Bras. 3(4):601, 1896.
Type: *Aspegrenia scirpoidea* Poepp. & Endl., Nov. Gen. Sp. Pl. 2:12, 1836. [*Octomeria scirpoidea* (Poepp. & Endl.) Rchb.f., Bot. Zeitung (Berlin) 10:856, 1852]
Ety.: From the Latin *scirpoideus,* "rushlike," referring to the terete leaves.

Syn.: *Aspegrenia* Poepp. & Endl., Nov. Gen. Sp. Pl. 2:12, 1836.
Type: *Aspegrenia scirpoidea* Poepp. & Endl., Nov. Gen. Sp. Pl. 2:12, 1836.
Ety.: Named in honor of Gustav Karsten Aspegren, a contemporary Swedish botanist.

Syn.: *Gigliolia* Barb. Rodr., Gen. Sp. Orch. Nov. 1:25, July 1877; non Beccari, May 1877.
Lectotype: *Gigliolia geraënsis* Barb. Rodr., Gen. Sp. Orch. Nov. 1:26, 1877. [*Octomeria geraënsis* (Barb. Rodr.) Barb. Rodr. Gen. Sp. Orch. Nov. 2:295, 1882] (Garay, Orquideologia 9:117, 1974)
Ety.: Named in honor of Enrico H. Giglioli, professor of natural history at the Natural History Museum of Florence, Italy.

Syn: *Octomeria* sect. *Kinetoglossum* Schltr., Arch. Jard. Bot. Rio de Janeiro, 3:291, 1922.
Type: *Octomeria campos-portoi* Schltr., Arch. Jard. Bot. Rio de Janeiro 3:291, 1922.
Ety.: From the Greek *kinetoglossum,* "a moving tongue," referring to the mobile lip.

Syn.: *Octandrorchis* Brieg., Die Orchideen 425, 1975, nom. invalid.
Type: *Octomeria leptophylla* Barb. Rodr., Gen. Sp. Orch. Nov. 2:112, 1882. [*Octandrorchis leptophylla* (Barb. Rodr.) Brieg., Die Orchidee 425, 1975]
Ety.: From the Greek *octandro-,* "with eight male parts," and *orchis,* referring to the eight pollinia.

Syn.: *Octomeria* sect. *Teretifolia-Scirpoideae* Pabst, Orch. Bras. 168, 1975.
Lectotype here designated: *Aspegrenia scirpoidea* Poepp. & Endl., Nov. Gen. Sp. Pl. 2:12, 1836.

The dozen species included here are characterized by terete or semiterete leaves and free lateral sepals.

Ophidion Luer, Selbyana 7:79, 1982.
Type: *Cryptophoranthus cymbula* Luer, Phytologia 46:346, 1980. [*Ophidion cymbula* (Luer) Luer, Selbyana 7:80, 1982]
Ety.: From the Greek *ophidion,* "a little snake," in allusion to the appearance of the flowers.

This small genus, found from Central America through the Andes, was proposed to accommodate four species with the apices of the sepals connate to form lateral windows, similar to those of *Zootrophion,* but with a totally different morphology of the lip. Adherence or connation of the tips of the sepals has evolved independently in several unrelated taxa.

Vegetatively the plants are not distinctive: narrowly elliptical leaves borne by shorter ramicauls with the inflorescence emerging with an annulus. The comparatively large lip is similar to that of *Restrepia* with an epichile and a hypochile, except that the lateral lobes of the hypochile are thick instead of hairlike. The lip is held rigidly within the concave synsepal, nearly filling it. The concave hypochile is inflexibly connate to the pedestal-like column-foot. The slender column is also similar to that of *Restrepia,* but two instead of four pollinia are present.

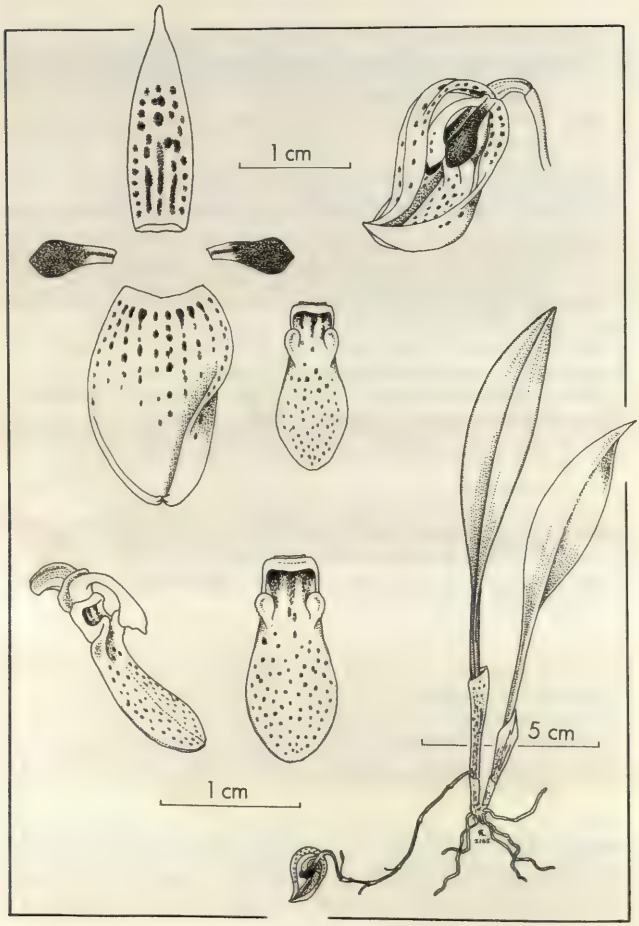

Plate 16. *Ophidion cunabulum* (Luer & Escobar) Luer

Platystele Schltr., Repert. Spec. Nov. Regni Veg. 8:565, 1910.
Type: *Platystele bulbinella* Schltr., Repert, Spec. Nov. Regni Veg. 8:565, 1910. (*Stelis compacta* Ames, Orchidaceae 3:76, t. 53, 1908) [*Platystele compacta* (Ames) Ames, Proc. Biol. Soc. Wash. 35:85, 1922]
Ety.: From the Greek *platystele*, "a broad column," referring to the broad but thin column of the species.

This genus of about 50 little species is frequent and widespread from Mexico to Bolivia, but infrequent in Brazil. Except for a few repent species, most are characterized by caespitose, narrowly obovate, short-stemmed leaves and a delicate raceme of successive or simultaneous flowers shorter or longer than the leaf. The inflorescence emerges from the ramicaul with an annulus below the abscission layer. The flowers are small with free, more or less translucent sepals and petals. The lip is simple and hinged to the base of the short column or pedestal-like column-foot. The column is short and broad, more or less membranous with an apical anther with two pollinia, and a bilobed, transverse stigma similar to that of *Lepanthopsis*, *Pleurothallis* subgen. *Pleurothallis*, and many species of *Stelis*.

This genus is very closely allied to *Pleurothallis*, and several authors have reduced it to synonymy. However, the species form a rather homogeneous unit, and they are easily recognized. A few species with simultaneous flowers arranged in a row, resemble those of *Lepanthopsis*, but the smooth, cauline sheaths prevent their inclusion. These species, also distinguished by basal lobes of the lip that embrace the column, are segregated here into a subgenus.

KEY TO THE SUBGENERA OF *PLATYSTELE*

1 Raceme flexuous and loose, or successively flowered; lip entire ..... subgen. *Platystele*
1′ Raceme strict and simultaneously flowered; lip 3-lobed ..... subgen. *Teagueia*

Platystele subgen. **Platystele**
Type: *Platystele bulbinella* Schltr.

The great majority of the species of the genus are closely related and are conveniently grouped together in this subgenus.

Platystele subgen. **Teagueia** Luer, subgen. nov.
Type: *Platystele teaguei* Luer, Selbyana 5:157, 1979.
Ety.: Named in honor of Walter Teague of San Francisco, CA, who first discovered the type species.

Labellum trilobum excavatum trilobum, lobis basalibus columnam amplectentibus.

The three known species that constitute this subgenus are known from the Central Cordillera of Colombia to northern Ecuador. The comparatively large flowers with sepaline tails are borne more or less simultaneously in a strict raceme. The lips are three-lobed with the basal lobes surrounding the column, and the disc cleft or concave. The short column bears a transverse, bilobed stigma.

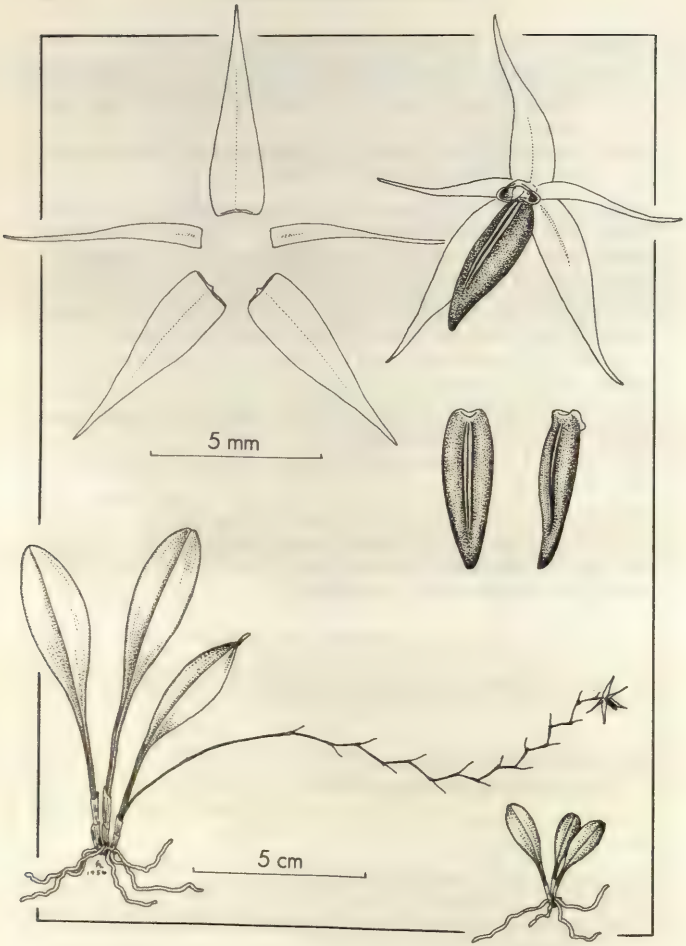

Plate 17. *Platystele orectoglossa* P. Ortiz

Pleurothallis R. Br., in Aiton, Hort. Kew. ed. 2, 5:211, 1813.
Type: *Epidendrum ruscifolium* Jacq., Enum. Pl. Carib. 29, 1760.
Ety.: From the Greek *pleurothallos,* "riblike branches," referring to the caespitose, slender ramicauls seen in *P. ruscifolia* and in much of the rest of the Pleurothallidinae.

Syn.: *Acianthera* Schweidw., Allg. Gartenzeitung 10:292, 1842.
Acronia Presl, Rel. Haenk. 1:103, 1827.
Anathallis Barb. Rodr., Gen. Sp. Orch. Nov. 1:23, 1877.
Andreettaea Luer, Selbyana 2:183, 1978.
Brenesia Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:200, 1923.
Centranthera Schweidw., Allg. Gartenzeitung 10:293, 1842, non R.Br. 1910.
Colombiana Ospina, Orquideologia 8:230, 1974.
Crocodeilanthe Rchb.f. & Warsc., Xenia Orchid. 1:10, 1854.
Cryptophoranthus Barb. Rodr., Gen. Sp. Orch. Nov. 2:79, 1882.
Kraenzlinella Kuntze, Lex. Gen. Phan. 310, 1903.
Otopetalum Lehm. & Krzl., Bot. Jahrb. Syst. 26:457, 1899, non Miquel 1856.
Pabstiella Brieg. & Sengh., Die Orchideen 429, 1975, nomen nudum.
Palmoglossum Kl. ex. Rchb.f., Xenia Orchid. 1:174, 1856, in synonymy.
Phloeophila Hoehne & Schltr., Arch. Bot. São Paulo 1:199, 1926.
Physosiphon Lindl., Edward's Bot. Reg. 21:sub. t. 1797, 1835.
Physothallis Garay, Svensk. Bot. Tidskr. 47:199, 1953.
Pleurobotryum Barb. Rodr., Gen. Sp. Orch. Nov. 1:120, 1877.
Pseudoctomeria Krzl., Repert. Beih. 34:219, 1925.
Pseudostelis Schltr., Anexos Mem. Inst. Butantan, Secc. Bot. 1(4):36, 1922.
Rhynchopera Kl. in Link, Klotzsch & Otto, Icon. Pl. Rar. 2:103, t. 41, 1844.
Sarracenella Luer, Selbyana 5:388, 1981.
Specklinia Lindl., Gen. Sp. Orchid. Pl. 8, 1830.
Talpinaria Karst., Fl. Columb. 1:153, 1861.

This huge, conglomerate genus is so polymorphic that a generalized description is impractical. Over 2000 epithets have been described in the genus, and at one time or another about 25 genera have been relegated to its synonymy. At the present time 27 subgenera with 25 sections may be counted.

The genus is treated in the *Systematics of the Genus Pleurothallis* (in ed., Luer).

Pleurothallopsis Porto & Brade, Arq. Inst. Biol. Veg. 3:133, 1937.
Type: *Lepanthes nemorosa* Barb. Rodr., Gen. Sp. Orch. Nov. 2:54, 1882. [*Pleurothallopsis nemorosa* (Barb. Rodr.) Porto & Brade, Arq. Inst. Biol. Veg. 3:133, 1937]
Ety.: From the Latin *nemorosus,* "pertaining to the forest," referring to the habitat.

The solitary species that comprises this genus was first described without a lip or pollinia in *Lepanthes* by Barbosa Rodrigues. Cogniaux transferred it to *Pleurothallis* [*Pleurothallis sylvatica* Cogn., Fl. Bras. 3(4):455, 1896], still without knowledge of lip or pollinia. When the missing data were eventually known, Dr. Paulo de Campos Porto and Dr. Curt Brade described the genus *Pleurothallopsis* to accommodate the unusual species.

The ramicaul is enclosed by a series of loose sheaths. The flowers are produced singly by elongate, slender peduncles from near the apex, presumably without an annulus (no material examined). The drawings of the sepals (the laterals connate), petals and lip are the same as those of *Restrepiopsis.* However, the drawing shows eight pollinia of equal size. If it were not for the differences in the number of pollinia, *Octomeria, Pleurothallopsis* and *Restrepiopsis* might be united.

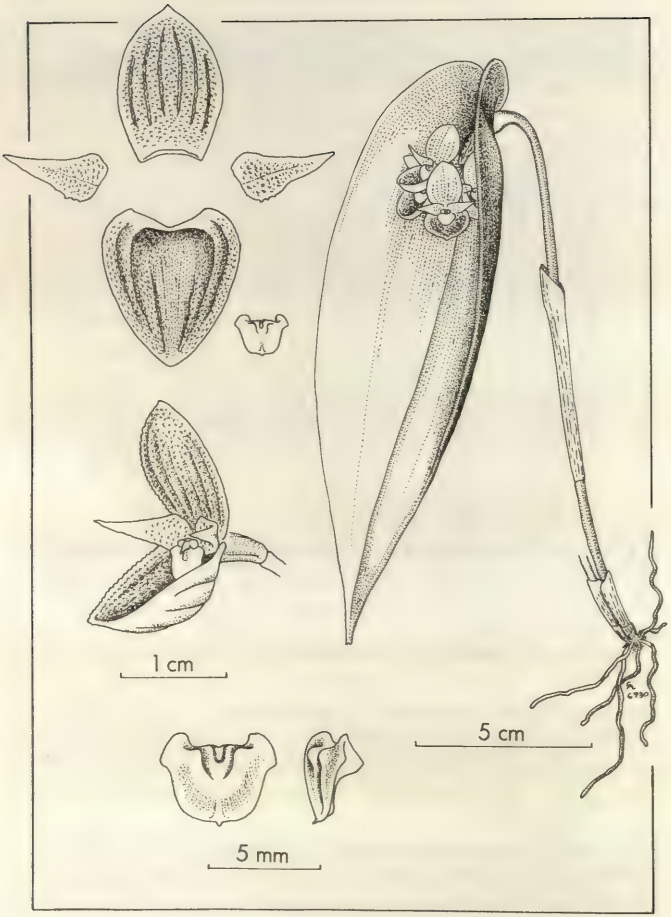

Plate 18. *Pleurothallis cyanea* Luer & Escobar

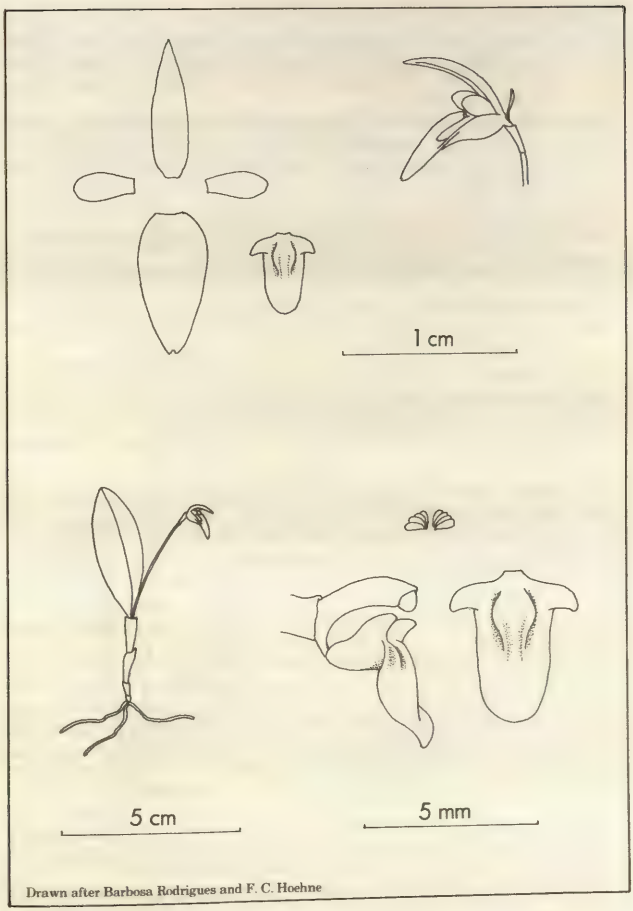

Plate 19. *Pleurothallopsis nemorosa* (Barb. Rodr.) Porto & Brade

Porroglossum Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7:82, 1920.
Type: *Porroglossum colombianum* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7:83, 1920. (*Masdevallia mordax* Rchb.f., Flora 69:559, 1886) [*Porroglossum mordax* (Rchb.f.) Sweet, Orquideologia 5:166, 1970]
Ety.: From the Greek *porro,* "far, far off," and *glossa,* "tongue," referring either to the position of the lip in relation to the column or elongated column-foot, or to the fact that the lip was far from the usual.

Syn.: *Masdevallia* sect. *Echidnae* Rchb.f., Linnaea 41:11, 1876.
Type: *Masdevallia echidna* Rchb.f., Bonplandia 3:69, 1855. [*Porroglossum echidnum* (Rchb.f) Garay, Svensk. Bot. Tidskr. 47:201, 1953]
Ety.: From the Greek *echidna,* "an adder," referring to the appearance of the rough flowers.

Syn.: *Masdevallia* sect. *Muscosae* Woolw., The Genus *Masdevallia* sect. VII, 1896.
Type: *Masdevallia mucosa* Rchb.f., Gard. Chron. 1:460, 1875. [*Porroglossum muscosum* (Rchb.f.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7:83, 1920]
Ety.: From the Latin *muscosus,* "mossy," referring to the mosslike hairs of the peduncle.

Syn.: *Lothiania* Krzl., Gard. Chron. ser. 3, 75:173, 1924.
Type: *Lothiania mordax* Rchb.f., Gard. Chron. ser. 3, 75:173, 1924.
Ety.: Named in honor of the Marquess of Lothian, orchid enthusiast of Newbattle Abbey.

This Andean genus is composed of 23 species with a specialized lip which was first noted to be sensitive when the phenomenon was observed in cultivation at Kew by W. Bean (Oliver 1888). Vegetatively the leaves are coriaceous, sometimes verrucose, narrowly obovate, from a short ramicaul that produces the successively flowered inflorescence with an annulus. The flowers may be either resupinate or nonresupinate, and the sepals are usually caudate. The petals are small and fleshy.

The blade of the lip is "anchor-shaped" with a callus at the base above a long, bent claw which is attached to the back surface of the column-foot. The column is short with an apical anther and rostellum, and a large ventral stigma. The foot is much elongated, the distal half free from the sepals. The free apex exerts pressure against the callous base of the blade of the lip, the claw being bent around the free apex of the column-foot. When the callus is stimulated, a presumed loss of turgor in the callus causes the blade to snap upward to impinge the intruder against the column. After a while the turgor is presumably regained, again causing pressure against the apex of the column-foot which forces the lip back down into its receptive position.

Schlechter was apparently unaware of the sensitive properties of the lip when he described the genus in 1920. He included only two species (*Masdevallia mordax* and *M. muscosa*), not recognizing the other species already described by that time as being related. He transferred three to *Scaphosepalum* and left two in *Masdevallia.*

In his monograph of *Masdevallia* in 1925, Kränzlin completely failed to understand the genus. He reduced it into the synonymy of *Masdevallia,* scattering the species into three distant sections and his genus *Lothiania.*

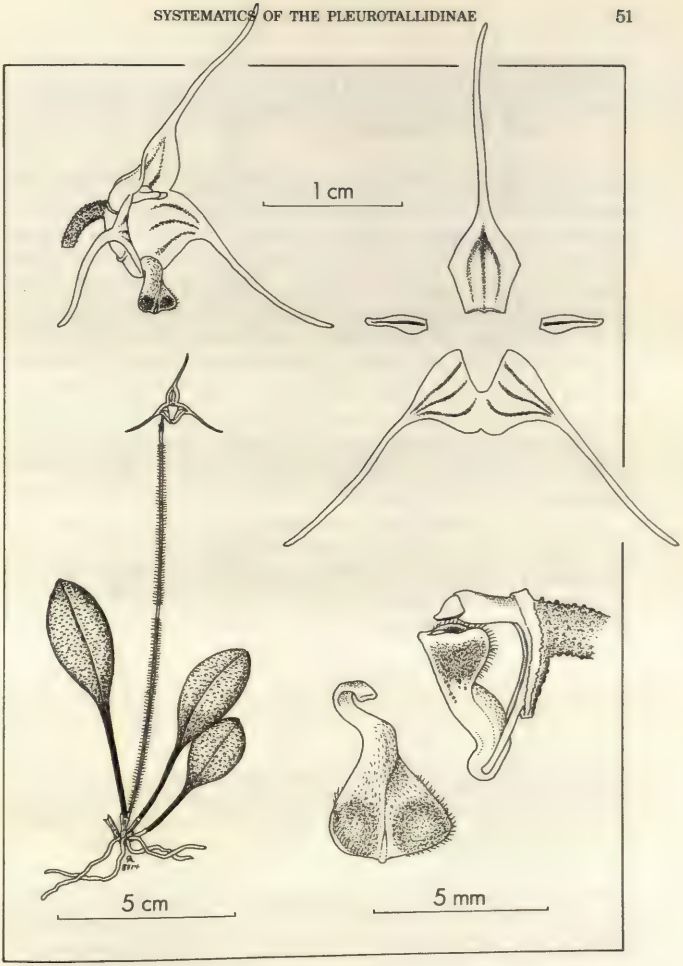

Plate 20. *Porroglossum muscosum* (Rchb.f.) Schltr.

Restrepia H.B.K., Nov. Gen. Sp. Pl. 1:366, 1816.
Type: *Restrepia antennifera* H.B.K., Nov. Gen. Sp. Pl. 1:367, 1816.
Ety.: Named in honor of Don José Restrepo, an early investigator of the flora of Colombia.

Kunth described this genus from a collection by Humboldt and Bonpland of a widespread and relatively frequent Andean species. To date about 80 epithets, many of them synonyms, have been added to the genus. Several other genera, however, have been carved from the total, leaving about 25 fairly well-defined species. Most seem interrelated with *R. antennifera*. They are difficult to differentiate because of their similarity and overlapping variabilities. There seems to be a widespread interbreeding population of similar forms which constitutes the bulk of the genus as *R. antennifera*, and which occupies the center of distribution in the high Andes of Colombia and Ecuador. Within the circle, as well as on the periphery of the circle, populations have evolved which seem to deserve recognition, and there are those populations farther from the mainstream that clearly need to be recognized.

Reichenbach transferred the solitary species of Lindley's *Pinelia* (*P. hypolepta*) to *Restrepia* in 1861, obviously believing it to be a pleurothallid. It is for this reason that *Pinelia* is included in the list of genera published in Pleurothallidinae.

Very briefly the genus may be identified by the ramicauls clothed by a series of inflated, compressed, more or less imbricating sheaths; solitary flowers; a clavate dorsal sepal and petals; a colorful synsepal; and a distinctive lip with a concave hypochile flanked by a pair of hairlike appendages, and fixed to the pedestal-like column-foot by a short, rigid rod. There are four pollinia.

Restrepiella Garay & Dunsterv., Ven. Orch. Ill. 4:266, 1966.
Type: *Pleurothallis ophiocephala* Lindl., Edward's Bot. Reg. 24:Misc. 34, 1838, non Barb. Rodr. 1882. [*Restrepiella ophiocephala* (Lindl.) Garay & Dunsterv., Ven. Orch. Ill., 4:266, 1966]
Ety.: Named for the genus *Restrepia*, plus the diminutive.

The single species comprising this genus is robust with a stout, well-developed ramicaul with a tubular bract sheathing the middle, and a couple bracts at the base. The inflorescence is single-flowered and the flowers emerge successively from near the apex of the ramicaul without an annulus, suggesting a relationship with *Myoxanthus* or *Pleurothallis* subgen. *Acianthera*. The sepals are fleshy and pubescent, the petals are ciliate, the lip is thick, and the column is well-developed with longitudinal wings and a toothed apex that incompletely covers the ventral anther. Four pollinia are present.

The other species originally included in *Restrepiella* belong to *Restrepiopsis* which is more closely allied to *Octomeria* and *Pleurothallopsis*.

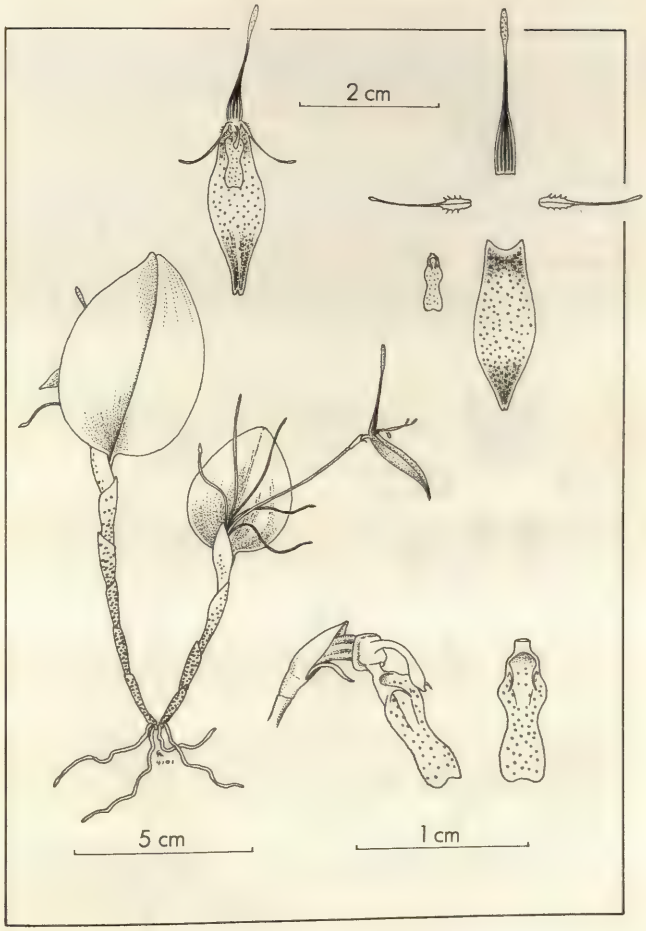

Plate 21. *Restrepia teaguei* Luer

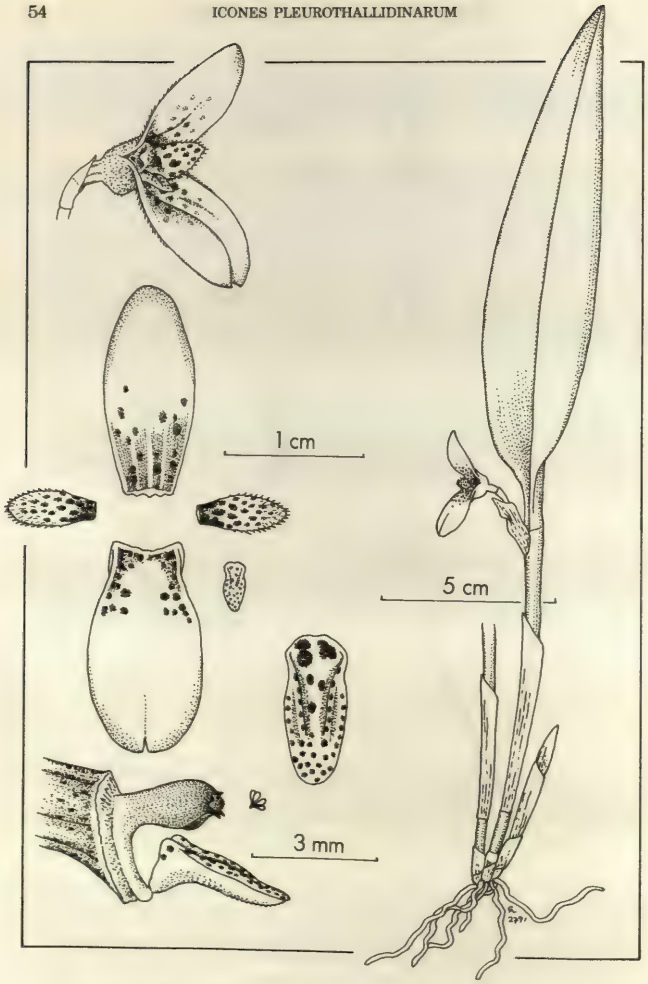

Plate 22. *Restrepiella ophiocephala* (Lindl.) Garay

Restrepiopsis Luer, Selbyana 2:199, 1978.
Type: *Restrepia ujarensis* Rchb.f., Bonplandia 3:225, 1855.
[*Restrepiopsis ujarensis* (Rchb.f.) Luer, Selbyana 2:200, 1978]
Ety.: Named for the genus *Restrepia* plus the Greek suffix denoting a similarity.

This genus consists of about 18 interrelated species, vegetatively more or less similar to *Restrepia,* and characterized by solitary, membranous flowers basically similar to many of those of *Octomeria* and inseparable from *Pleurothallopsis* except for the number of pollinia. The cauline sheaths of one species (*R. reichenbachiana*) are pubescent, the basis for dividing the genus into two subgenera.

The inflorescense emerges laterally near the apex of the ramicaul without an annulus. The dorsal sepal is free, but the lateral sepals may be coherent. The petals are not as large in proportion to the sepals as they are in *Octomeria.* The lips and columns are very similar to those of many species in *Octomeria,* but eight pollinia are present. Four pollinia are present in *Restrepiopsis.*

KEY TO THE SUBGENERA OF *RESTREPIOPSIS*

1 Sheaths of the ramicaul hirsute ..... subgen. *Endresia*
1′ Sheaths of the ramicaul glabrous ..... subgen. *Restrepiopsis*

Restrepiopsis subgen. **Endresia** Luer, subgen. nov.
Type: *Restrepia reichenbachiana* Endres, Gard. Chron 2:356, 1875.
[*Restrepiopsis reichenbachiana* (Endres) Luer, Selbyana 5:387, 1981]
Ety.: Named in honor of Sr. Endres of Costa Rica who discovered and described this species.

Vaginae ramicaulium hirsutae. Pedunculus elongatus.

This subgenus contains but one unusual species from Costa Rica. The short ramicauls are enclosed by two to three hirsute, tubular sheaths. The elongated peduncle exceeds the leaf in length. The flower parts are typical for the genus.

Restrepiopsis subgen. **Restrepiopsis**
Type: *Restrepia ujarensis* Rchb.f. Bonplandia 3:225, 1855.

All the other species of the genus are included in this subgenus.

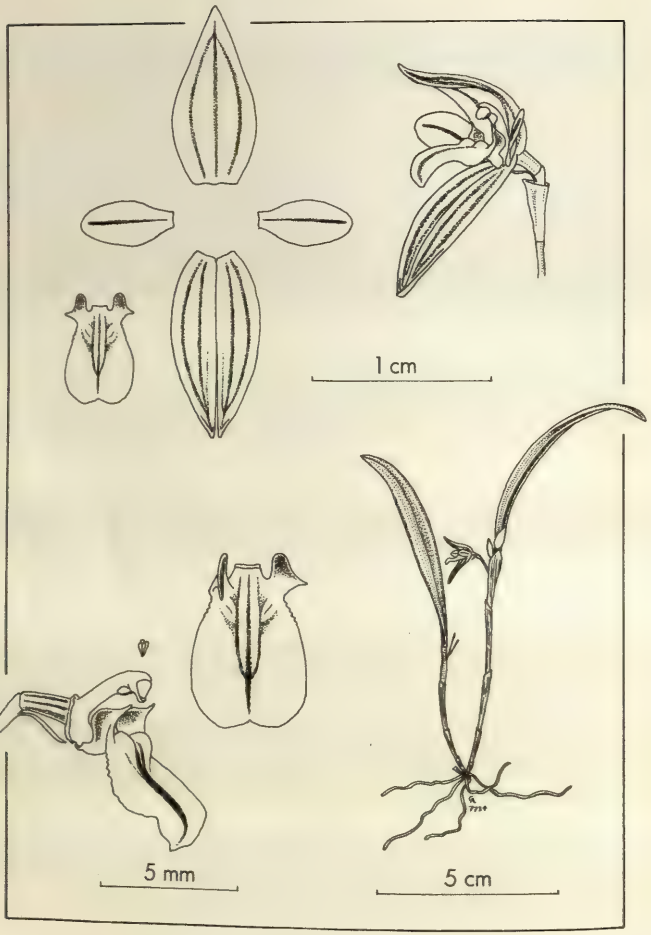

Plate 23. *Restrepiopsis striata* Luer & Escobar

Salpistele Dressler, Orquideología 14:6, 1979.
Type: *Salpistele brunnea* Dressler, Orquideología 14:6, 1979.
Ety.: From the Greek *salpinx*, "a trumpet," and *stele*, "a column," referring to the shape of the apex of the column.

This small genus of Central America and northwestern South America is closely allied to *Lepanthes*, but the sheaths of the ramicauls are not lepanthiform. As in many species of *Lepanthes*, the biparted lip is attached to the under surface of a footless column, but the apex of the column is terminated by a more or less flat, collarlike disc surrounding the apical anther and stigma.

From Costa Rica Endres sent Reichenbach beautifully detailed drawings of the genus with the proposed name "Oreades." These drawings are preserved in Reichenbach's herbarium at W.

The following transfers are necessary:

Salpistele dielsii (Mansf.) Luer, comb. nov.
Lepanthes dielsii Mansf., Biblioth. Bot. 29(116): 72, 1937.

Salpistele pensilis (Schltr.) Luer, comb. nov.
Lepanthes pensilis Schltr. Repert. Beih. 8:56, 1921.
Lepanthes echinocarpa L.O.Wms., Bot. Mus. Leafl. 9:1, 1940.

Scaphosepalum Pfitz., Nat. Pflanzenfam. 2(6):135, 1888.
Type: *Masdevallia ochthodes* Rchb.f., Bonplandia 3:70, 1855. [*Scaphosepalum ochthodes* (Rchb.f.) Pfitz., Nat. Pflanzenfam. 2(6):139, 1888]
Ety.: From the Greek *scaphosepalos*, "with boatlike sepals," referring to the shape of the lateral sepals.

Syn.: *Pleurothallis* sect. *Racemosae* Rchb.f., Bonplandia 2:24, 1854.
Type: *Masdevallia verrucosa* Rchb.f., Linnaea 22:819, 1849. [*Scaphosepalum verrucosum* (Rchb.f.) Pfitz., Nat. Pflanzenfam. 2(6):139, 1888]
Ety.: From the Latin *racemosus*, "racemose," referring to the inflorescence.

Syn.: *Masdevallia* sect. *Verrucosae* Rchb.f., Gard. Chron. 1:8, 1876.
Type: *Masdevallia verrucosa* Rchb.f., Linnaea 22:819, 1849.
Ety.: From the Latin *verrucosus*, "warty," referring to the peduncles.

The earliest species of this genus to be described were attributed to *Masdevallia* by Reichenbach, probably because of the vegetative similarity and the sepaline tails. Since he had only fragments of dried specimens with which to work, he was not able to describe accurately the cushionlike callus of the sepals until he described *M. pulvinaris* 25 years later. Approximately 25 species are found from Central America to central Bolivia.

Vegetatively the plants are shortly repent to caespitose. The coriaceous leaves are borne by short ramicauls and the inflorescence emerges with an annulus low on the ramicaul. The raceme produces a succession of non-resupinate flowers usually with caudate sepals. A usually prominent, more or less flat, triangular callus occupies the inner surface of the lateral sepals toward the apex. The petals are fleshy, broad and multiangular. The small lip is deflexed and more or less crested and lobed near the middle. The elongated, thick-footed column is winged with a toothed apex partially covering the ventral anther with two pollinia.

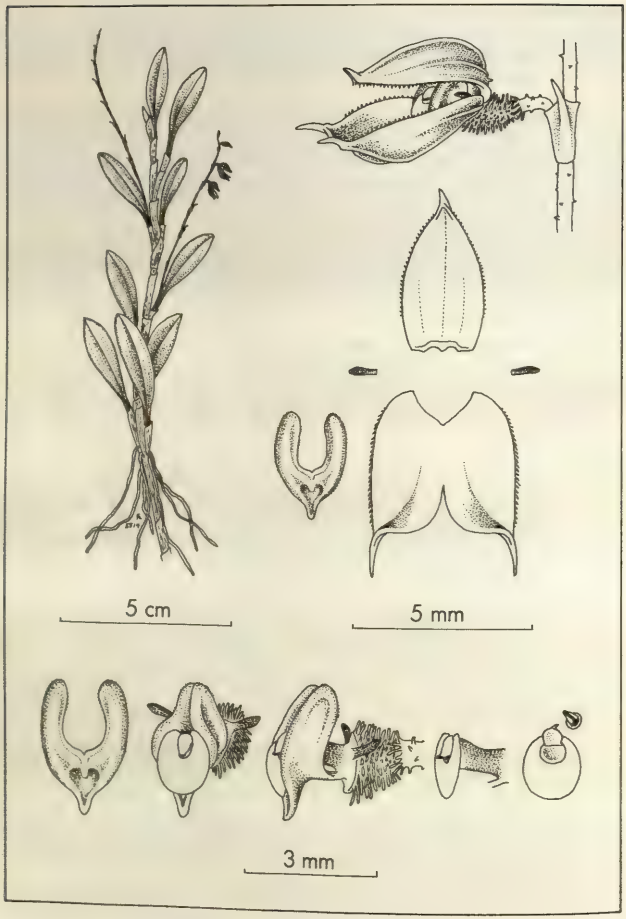

Plate 24. *Salpistele dielsii* (Mansf.) Luer

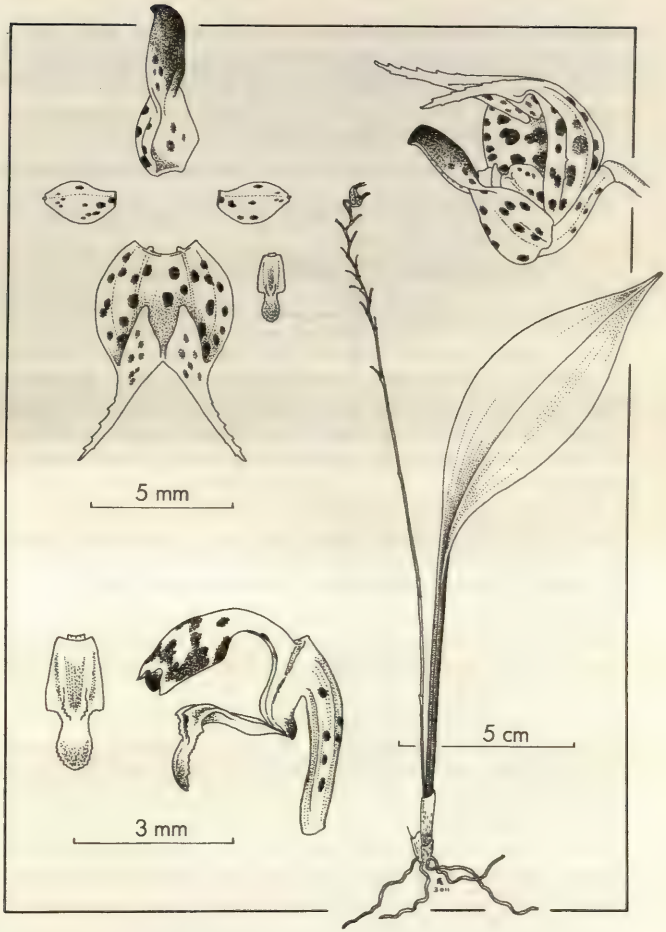

Plate 25. *Scaphosepalum ophidion* Luer

Stelis Sw., J. Bot. (Schrader) 2(4):239, t. 2, fig. 3, a-g, 1799, nom. conserv.

Lectotype: *Epidendrum ophioglossoides* Jacq., Enum. Pl. Carib. 29, 1760. [*Stelis ophioglossoides* (Jacq.) Sw., J. Bot. (Schrader) 2:239, 1799] (Green, Prop. Brit. Bot. 100, 1929)

Ety.: From the Greek *stelis,* "a kind of mistletoe," in reference to the appearance of the epiphytic plant.

Syn.: *Humboldtia* Ruiz & Pav., Fl. Peruv. Chil. Prodr. 121, t. 27, 1794, nom. conserv., non Vahl 1794, nom. rej.

Lectotype: *Humboldtia purpurea* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 235, 1798. [*Stelis purpurea* (Ruiz & Pav.) Willd., Sp. Pl. 4:140, 1805] (Garay & Sweet, J. Arnold Arbor. 53: 528, 1972)

Ety.: Named in honor of the renowned German scientist and naturalist Alexander von Humboldt (1769-1859), who explored the American Tropics.

A proposed retypification of the genus by Garay (Taxon 29:692, 1980) was rejected (Taxon 32:282, 1983). It was the committee's consensus that Jacquin's types are based on his own collections. Garay had declared that *Epidendrum ophioglossopides* is based on a polynomial by Plumier of 1702, and on Plumier's drawing published by Burmann in 1759. [Regardless, this crude sketch certainly is not "at once" referable to *Pleurothallis floribunda* (Lindl.) Lindl. Since no petals are visible in drawing, it could as easily be interpreted to represent *Stelis ophioglossoides* (Jacq.) Sw.]

More than 500 species constitute this commonly neglected genus which is frequent and widespread through the American tropics. The genus is generally disliked by most professional and amateur botanists because of the apparent sameness of the small flowers that are difficult to interpret, especially after having been pressed and dried. Although vegetatively the species vary greatly, most are readily recognized by the inflorescence. The sepals are commonly about equally triangular, but in many species the lateral sepals are connate into a concave synsepal. The flowers of some species are sensitive, closing during the day or when disturbed. In nearly all species the middle of the flower is occupied by a compact central apparatus consisting of a short column closely surrounded by small petals and a small lip.

The petals, with few exceptions, are small, transverse and marginally thickened, and they closely flank the column and lip. The lip, with few exceptions, is small, thick, more or less transverse and three-sided, the uppermost plane (the base) of the lip resting beneath the column so that the glenion (page 8.) which is often present on the front surface is placed beneath the rostellum. The various outlines of the lateral views of the lips described by Garay (1980) merge into each other, rendering useless many of his sections.

The column is short and broad with an apical anther and rostellum. The stigma is also apical, and it is usually bilobed so that the lateral lobes protrude to either side of the anther. The variable degree of confluence of the lobes is easily seen if the rostellar flap is lifted. In extreme cases the stigmatic lobes are elongated so that the receptive surfaces are held far to either side of the anther. Garay (1980) recently segregated into *Apatostelis* those species with a more or less confluent stigma as well as some species with a transverse, bilobed stigma.

Since the species of the genus seem to be closely interrelated, I do not believe that the genus should be divided at the subgeneric level, espe-

cially when only the variable degree of connation of the sepals is the deciding character.

An attempt was made to write a new key based first on vegetative characters. However, the variable vegetative characters are even more interspersed among the interrelated species than are the degrees of connation of the sepals, and the shapes of the petals, lip and column. Since the tiny, fleshy petals, lip and column are difficult or impossible to interpret accurately from reconstituted, pressed flowers, it is more practical to leave them to the most specific parts of the key. A complete revision of the genus is being prepared for later publication.

KEY TO THE SECTIONS OF *STELIS*.

1 Lateral sepals approximate or connate to or near the apex, forming a concave synsepal, the dorsal sepal connate basally ..... Sect. *Humboldtia*
1′ Lateral sepals not connate or approximate into a concave synsepal with the dorsal sepal connate only basally 2

2 Dorsal and lateral sepals about equally connate, without forming a synsepal ..... Sect. *Stelis*
2′ Sepals deeply connate, or the laterals more deeply connate to the dorsal sepal than to each other 3

3 Lateral sepals much more deeply connate to the dorsal sepal than to themselves, the sepals widespread ..... Sect. *Nexipous*
3′ Sepals variably connate, forming a tubular or globose flower ..... Sect. *Dialissa*

Stelis sect. **Dialissa** (Lindl.) Lindl., Folia Orch. *Stelis* 2, 1858.
Type: *Dialissa pulchella* Lindl., Ann. Mag. Nat. Hist. 15:107, 1845. (*Stelis dialissa* Rchb.f., Bonplandia 3:71, 1855.)
Ety.: From the Latin *Dialis*, "pertaining to Jupiter," for some quality Lindley saw in the plant.

Basionym: *Dialissa* Lindl., Ann. Mag. Nat. Hist. 15:107, 1845.
Type: *Dialissa pulchella* Lindl., Ann. Mag. Nat. Hist. 15:107, 1845.

Syn.: *Stelis* subgen. *Dialissa* (Lindl.) Garay, Canad. J. Bot. 34:351, 1956.
Type: *Dialissa pulchella* Lindl., Ann. Mag. Nat. Hist. 15:107, 1845.

The species of this section are extremely varied vegetatively. The degrees of connation of the sepals to create a more or less tubular or urceolate flower are variable among the species, bringing some more or less closely allied species together. The petals, lip and column vary widely.

Stelis sect. **Humboldtia** (Ruíz & Pav.) Pers., Syn. Pl. 2:524, 1807.
Lectotype: *Humboldtia purpurea*, Ruíz & Pav., Syst. Veg. Fl. Peruv. Chil. 235, 1798. [*Stelis purpurea* (Ruíz & Pav.) Willd., Sp. Pl. 4:140, 1805] (Garay & Sweet, J. Arnold Arbor. 53:528, 1972)
Ety.: Named in honor of Alexander von Humboldt, noted German naturalist and early explorer of the Neotropics.

Bas.: *Humboldtia* Ruíz & Pav.

Syn.: *Stelis* sect. *Disepalae* Rchb.f., Bonplandia 3:70, 1855, nomen nudum.
Lectotype: *Stelis melanoxantha* Rchb.f., Bonplandia 3:71, 1855. (Garay, Bot. Mus. Leafl. 27:181, 1980)
Ety.: From the Greek *di-*, "two-," and *sepalon*, "sepal," referring to the bilabiate flowers.

Syn.: *Stelis* subgen. *Inaequales* Garay, Canad. J. Bot. 34:351, 1956.
Type: *Humboldtia purpurea* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 235, 1798.
Ety.: From the Latin *inaequalis*, "unequal," referring to the unequal sizes of the dorsal sepals and synsepal.

Syn.: *Stelis* sect. *Valvae* Garay, Canad. J. Bot. 34:351, 1956.
Type: *Humboldtia purpurea* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 235, 1798.
Ety.: From the Latin *valvae*, "valves," referring to the bivalvate flowers.

Syn.: *Steliopsis* Brieg., Die Orchideen 457, 1975, nom. invalid.
Type: *Steliopsis anneliesae* Brieg., Die Orchideen 457, 1975. (syn. of *S. maxima* Lindl.)
Ety.: From the genus *Stelis* and the Greek *-opsis*, referring to the similarity of the proposed genus to *Stelis*.

Syn.: *Stelis* subgen. *Stelis* sensu Garay, Bot. Mus. Leafl. 27:180, 1980, non sensu Garay, Canad. J. Bot. 34: 350, 1956.

Although the concave synsepal and lidlike dorsal sepal have developed in a large number of species of the genus, the vegetative characters, petals, lip and column are widely variable. Many, however, are closely allied.

Stelis sect. **Nexipous** (Garay) Luer, stat. nov.
Type: *Stelis nexipous* Garay, Bot. Mus. Leafl. 18:194, 1958.
Ety.: From the Greek *nexipous*, "a foot for swimming," referring to the duckfoot-shaped petals.

Basionym: *Stelis* subgen. *Nexipous* Garay, Bot. Mus. Leafl. 27:178, 1980.
Type: *Stelis nexipous* Garay, Bot. Mus. Leafl. 18:194, 1958.

In this section the widely spread lateral sepals are deeply parted, but deeply united to the dorsal sepals to form a more or less flat, fan-shaped flower. These few Ecuadorian species are closely related to sect. *Stelis*.

Stelis sect. **Stelis**

Syn.: *Stelis* sect. *Eustelis* Lindl., Folia Orch. *Stelis* 2, 1858, nom. invalid.
Type: *Epidendrum ophioglossoides* Jacq., Enum. Pl. Carib. 29, 1760. [*Stelis ophioglossoides* (Jacq.) Sw., J. Bot. (Schrader) 2:239, 1799]
Ety.: From the Greek *eu-*, "true," and the genus *Stelis*, indicating that the section includes the true species.

Syn.: *Stelis* sect. *Labiatae* Lindl., Folia Orch. *Stelis* 2, 1858.
Lectotype: *Stelis brevilabris* Lindl., Ann. Mag. Nat. Hist. ser. 1, 5:107, 1845. (Garay, Bot. Mus. Leafl. 27:180, 1980)
Ety.: From the Latin *labiatus*, "labiate," possibly referring to the shorter lateral sepals.

Syn.: *Stelis* sect. *Trivalves* Rchb.f., Ann. Bot. Syst. 6:199, 1861, nomen.
Lectotype: *Stelis major* Rchb.f., Bonplandia 2:23, 1854. (Garay, Bot. Mus. Leafl. 27:179, 1980)
Ety.: From the Latin *trivalvis*, "three-valved," referring to the three sepals.

Syn.: *Stelis* sect. *Patuliflorae* Barb. Rodr., Gen. Sp. Orch. Nov. 2:82, 1882.
Lectotype here designated: *Stelis megantha* Barb. Rodr., Gen. Sp. Orch. Nov. 2:83, 1882.
Ety.: From the Latin *patuliflorus*, "with spread-out flowers," referring to the inflorescence.

Syn.: *Stelis* sect. *Distichae* Lindl. ex Cogn., Fl. Bras. 3(4):343, 1896.
Lectotype: *Stelis disticha* Poepp. & Endl., Nov. Gen. Sp. 1:47, 1836. (Garay, Bot. Mus. Leafl. 27:179, 1980)
Ety.: From the Latin *distichus*, "in two opposite rows," referring to the arrangement of the flowers in the inflorescence.

Syn.: *Stelis* sect. *Polystachyae* Lindl. ex Cogn. Fl. Bras. 3(4):343, 1896.
Lectotype here designated: *Stelis hylophila* Rchb.f., Bonplandia 3:241, 1855.
Ety.: From the Greek *polystachys*, "with many spikes," referring to the inflorescence.

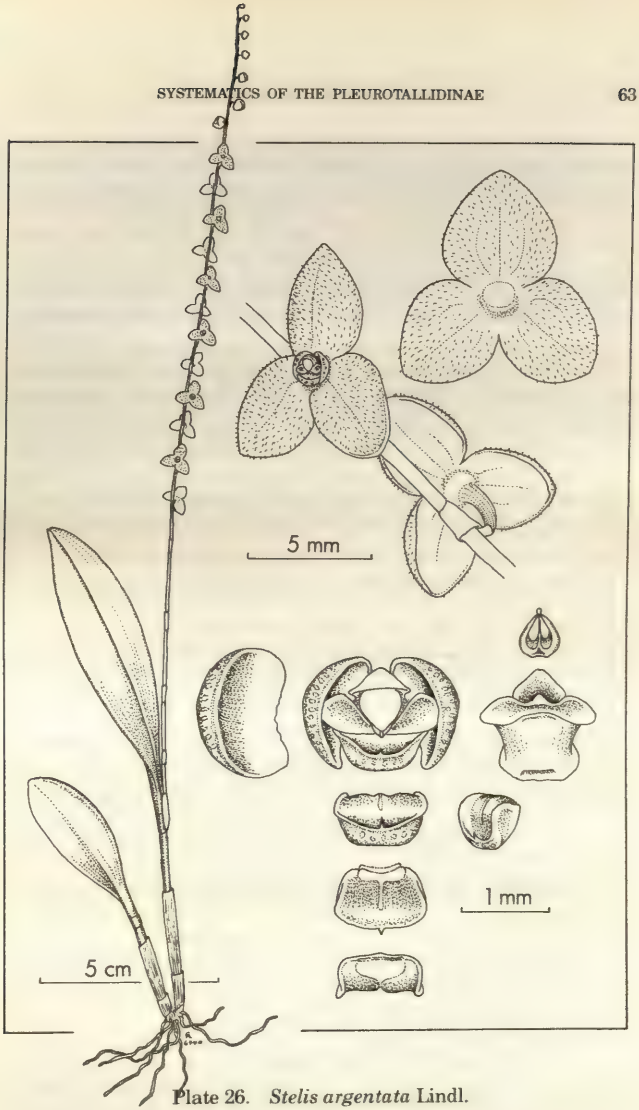

Plate 26. *Stelis argentata* Lindl.

Syn.: *Stelis* sect. *Monostachyae* Lindl. ex Cogn. Fl. Bras. 3(4):344, 1896.
Lectotype: *Stelis argentata* Lindl., Edward's Bot. Reg. 28:Misc. 64, 1842 (Garay, Bot. Mus. Leafl. 27:180, 1980)
Ety.: From the Greek *monostachys*, "with one spike," referring to the inflorescence.

Syn.: *Stelis* subgen. *Eustelis* Cogn., Fl. Bras. 3(4):345, 1896. nom. invalid.
Type: *Epidendrum ophioglossoides* Jacq., Enum. Pl. Carib. 29, 1760. [*Stelis ophioglossoides* (Jacq.) Sw., J. Bot (Schrader) 2:239, 1799]

Syn.: *Stelis* sect. *Chasmostelis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:18, 1923.
Type: *Stelis despectans* Schltr., Repert. Spec. Nov. Regni Veg. 8:453, 1910.
Ety.: From the Greek *chasma*, "a gaping hole," plus the genus *Stelis*, referring to the deeply excavate lip.

Syn.: *Stelis* subgen. *Stelis* Sw. ex Garay, Canad. J. Bot. 34:350, 1956.
Type: *Epidendrum ophioglossoides* Jacq., Enum. Pl. Carib. 29, 1760. [*Stelis ophioglossoides* (Jacq.) Sw., J. Bot. (Schrader) 2:239, 1799]

Syn.: *Stelis* sect. *Concavae* Garay, Canad. J. Bot. 34:351, 1956.
Lectotype: *Humboldtia oblonga* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 236, 1798. [*Stelis oblonga* (Ruiz & Pav.) Willd., Sp. Pl. 4:139, 1805] (Garay, Bot. Mus. Leafl. 27:180, 1980)
Ety.: From the Latin *concavus*, "concave," referring to the shape of the lip.

Syn.: *Stelis* sect. *Distinctae* Garay, Canad. J. Bot. 34:351, 1956.
Lectotype: *Stelis aprica* Lindl., Comp. Bot. Mag. 2:353, 1836. (Garay, Bot. Mus. Leafl. 27:180, 1980)
Ety.: From the Latin *distinctus*, "distinct," referring to a quality of the plant.

Syn.: *Stelis* sect. *Fissae* Garay, Canad. J. Bot. 34:351, 1956.
Lectotype: *Stelis papaquerensis* Rchb.f., Linnea 22:822, 1850. (Garay, Bot. Mus. Leafl. 27:179, 1980)
Ety.: From the Latin *fissus*, "cleft," referring to the basally connate sepals.

Syn.: *Stelis* sect. *Papulosae* Garay, Canad. J. Bot. 34:351, 1956.
Lectotype: *Epidendrum trigoniflorum* Sw., Prodr. 125, 1788. (Garay, Bot. Mus. Leafl. 27:179, 1980 [*Stelis trigoniflora* (Sw.) Garay, Bot. Mus. Leafl. 26:25, 1978]
Ety.: From the Latin *papulosus*, "papular," referring to the floral parts.

Syn.: *Stelis* subgen. *Stellata* Garay, Bot. Mus. Leafl. 27:179, 1980.
Type: *Epidendrum trigoniflorum* Sw. Prodr. 125, 1788 [*Stelis trigoniflora* (Sw.) Garay]
Ety.: From the Latin *stellatus*, "stellate," referring to the shape of the flowers.

Syn.: *Stelis* sect. *Pedales* Garay, Bot. Mus. Leafl. 27:179, 1980.
Type: *Humboldtia lanceolata* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 237, 1798. [*Stelis lanceolata* (Ruiz & Pav.) Willd. Sp. Pl. 4:139, 1805]
Ety.: From the Latin *pedalis*, "a foot long," an erroneous adjective applied to the elongate column-foot.

Syn.: *Stelis* sect. *Rhomboidea* Garay, Bot. Mus. Leafl. 27:179, 1980.
Type: *Stelis rhomboidea* Garay, Canad. J. Bot. 34:353, 1956.
Ety.: From the Latin *rhomboideus*, "rhomboid," referring to the shape of the lip.

Syn.: *Stelis* sect. *Isochilae* Garay, Bot. Mus. Leafl. 27:180, 1980.
Type: *Stelis apiculata* Lindl., Folia Orch. *Stelis* 11, 1858.
Ety.: From the Greek *isochilos*, "with the lip equal to the other parts," referring to the flower parts.

Syn.: *Apatostelis* Garay, Bot. Mus. Leafl. 27:185, 1980.
Type: *Stelis hylophila* Rchb.f., Bonplandia 3:241, 1855.
Ety.: From the Greek *apate*, "a deception," and the genus *Stelis*, in the misbelief that the column is of "very different" structure.

The majority of the species of the genus fall together into this section. In common with two other sections, the species vary widely in the morphology of their vegetative parts, petals, lip and column. All species, however, may be recognized by the more or less similar, widely spread sepals, variably connate into a more or less flat flower.

Trichosalpinx Luer, Phytologia 54:393, 1983.

Type: *Specklinia ciliaris* Lindl., Edward's Bot. Reg. 24:Misc. 31, 1838. [*Trichosalpinx ciliaris* (Lindl.) Luer, Phytologia 54:395, 1983]

Ety.: From the Greek *trichosalpinx*, "a trumpet with hairs," referring to the ciliated ribs and margins of the cauline sheaths.

This genus consists of those numerous species of pleurothallids with lepanthiform sheaths previously treated in *Pleurothallis*. It is as logical to segregate them as it is to maintain *Lepanthopsis* separate from *Platystele*.

Although closely related to *Pleurothallis*, as are some of the other pleurothallid genera, the sheaths of the ramicauls immediately identify these species. The lepanthiform sheaths are usually obvious, a convenient tool for recognition, but in some small species, the ramicaul may be very shortened with only one, or barely two, loose sheaths with the cellular appendages visible only with a hand lens. Two pollinia are present.

Two distinct subgenera may be recognized, one with three sections.

KEY TO THE SUBGENERA AND SECTIONS OF *TRICHOSALPINX*

1 Plants usually stout with nonproliferating ramicauls; racemes short; petals more or less ciliate or fimbriate; column elongate, toothed at the apex ..... subgen. *Trichosalpinx*

1′ Plants usually slender, often with proliferating ramicauls; racemes usually elongate; petals entire; column short or elongate, more or less winged at the apex ..... (subgen. *Tubella*) 2

2 Inflorescence racemose, the flowers simultaneous or several produced simultaneously; lip neither markedly callous nor with basal lobes embracing the column ..... *T.* sect. *Tubellae*

2′ Inflorescence 1-flowered, or racemose with the flowers produced singly; lip callous or with basal lobes embracing the column 3

3 Inflorescence racemose, the flowers produced successively; lip callous, the base of the lip fixed to a rudimentary column-foot ..... *T.* sect. *Pseudolepanthes*

3′ Inflorescence 1-flowered; lip with basal lobes embracing the column with a rudimentary foot ..... *T.* sect. *Apodae*

Trichosalpinx subgen. **Trichosalpinx**

Type: *Specklinia ciliaris* Lindl.

Syn.: *Pleurothallis* sect. *Brachystachyae* subsect. *Lepanthiformes* Lindl., Folia Orch. *Pleuroth.* 25, 1859.

Lectotype here designated: *Speklinia orbicularis* Lindl., Edward's Bot. Reg. 28:Misc. 31, 1838 [*Trichosalpinx orbicularis* (Lindl.) Luer, Phytologia 54:396, 1983]

Ety.: From the genus *Lepanthes* Sw. and the Latin *-formis*, referring to the lepanthiform habit.

Syn.: *Pleurothallis* sect. *Lepanthiformes* (Lindl.) Cogn., Fl. Bras. 3(4):591, 1896.

Syn.: *Pleurothallis* sect. *Bipaleolatae* Pabst, Orch. Brasilienses 162, 1975.
Type: *Specklinia orbicularis* Lindl., Edward's Bot. Reg. 28:Misc. 31, 1838.
Ety.: From the Latin *bipaleolatus*, non-decipherable, but intended to refer to the basal lobules of the lip.

The ramicauls of the species of this subgenus are usually stout and nonproliferating. The racemes are usually shorter than the leaf; the lateral sepals are commonly connate; the petals are usually ciliate or fimbriate; the lip is more or less ligulate, callous at the base, and bilobulate at the membranous, basal hinge. Many of the lips are similar to those of some species in *Pleurothallis* subgen. *Specklinia* sect. *Muscosae*. The column is elongate, usually toothed at the apex, partially covering the ventral anther. The column-foot is stout.

Trichosalpinx subgen. **Tubella** Luer, subgen. nov.
Type: *Pleurothallis acremona* Luer, Selbyana 5:157, 1979 [*Trichosalpinx acremona* (Luer) Luer, Phytologia 54:394, 1983]
Ety.: From the Latin *tubella*, "a little tube," referring to the cauline sheaths.

Ramicaules saepe proliferantes. Racemi quam foliis plerumque longiores. Petala integra. Labellum integrum vel trilobatum. Columna brevis longave plus minusve alata.

The numerous species of this subgenus are usually slender, sometimes proliferating. The racemes are commonly longer than the leaf; the lateral sepals are usually free; the petals are usually entire; and the lip is either simple or three-lobed without basal lobules. The column is variable in length and the anther may be apical, subapical or ventral. The stout column-foot may be very short or rudimentary. Three sections may be recognized.

Trichosalpinx subgen. **Tubella** sect. **Apodae** Luer, sect. nov.
Type: *Pleurothallis apoda* Garay & Dunsterv., Venez. Orch. Ill. 3:246, 1965. [*Trichosalpinx apoda* (Garay & Dunsterv.) Luer, Phytologia 54:394, 1983]
Ety.: From the Greek *apodion*, "footless," referring to the obsolescent column-foot.

Inflorescentia uniflora. Lobi basalia labelli columnam teretem brevem amplectentes. Pes columnae obsolescens.

The solitary species that comprises this section is widespread in the Andes, and apparently without close relatives. It may be distinguished by the single-flowered inflorescence and a broad, obtuse, subcordate lip with basal lobes embracing a short, terete column with an apical anther, rostellum and stigma, and an obsolescent column-foot.

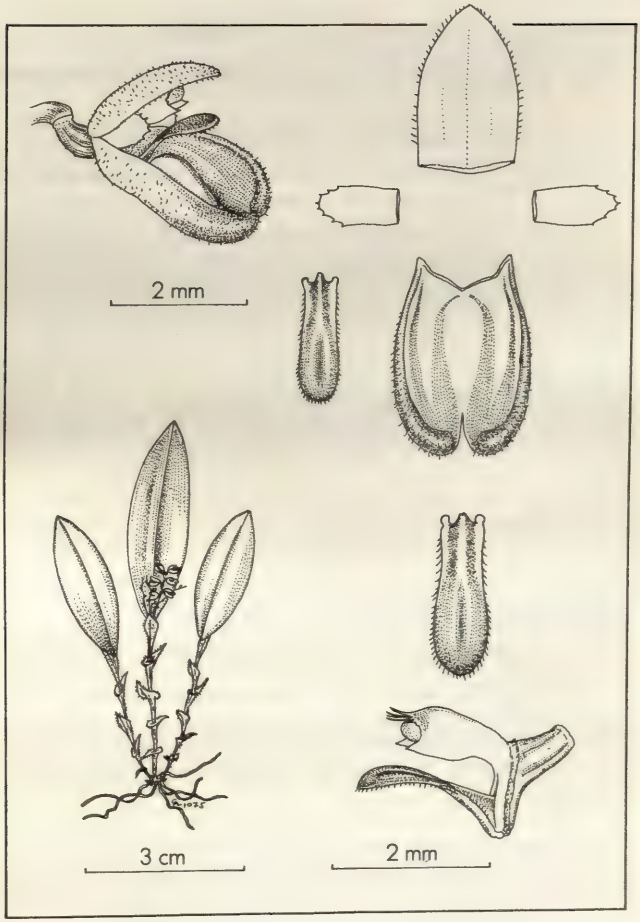

Plate 27. *Trichosalpinx ciliaris* (Lindl.) Luer

Trichosalpinx subgen. **Tubella** sect. **Pseudolepanthes** Luer, sect. nov.

Type: *Trichosalpinx pseudolepanthes* Luer & Escobar, Orquideologia 16:183, 1984.

Ety.: From the Greek *pseudo-*, "false," and the genus *Lepanthes*, referring to similarity of the species to that genus.

Inflorescentia racemosa successiviflora. Labellum ligulatum callosum ad basim pedis columnae adfixum.

The habit of these unusual little species from the West Indies and the Andes that comprise this section is similar to that typical of the genus *Lepanthes*. The very small flowers are produced successively in a progressively lengthening raceme. The ligulate, callous lip is inflexibly adnate to an obsolescent column-foot. The column is short with an apical anther and stigma.

A new combination needs to be made:

Trichosalpinx microlepanthes (Griseb.) Luer, comb. nov.
Basionym: *Pleurothallis microlepanthes* Griseb., Fl. Brit. West Indes 610, 1864.
Syn.: *Lepanthopsis microlepanthes* (Griseb.) Ames, Bot. Mus. Leafl. 1(9):24, 1933.
Lepanthes leonii C. Schweinf. in Leon, Fl. Cuba 1:362, 1946.

Trichosalpinx subgen. **Tubella** sect. **Tubellae** Luer, sect. nov.
Type: *Pleurothallis acremona* Luer, Selbyana 5:157, 1979. [*Trichosalpinx acremona* (Luer) Luer, Phytologia 54:394, 1983]

Syn.: *Pleurothallis* sect. *Elongatae* subsect. *Lepanthiformes* Lindl., Folia Orch. *Pleuroth.* 26, 1859.
Lectotype here designated: *Pleurothallis chamaelepanthes* Rchb.f., Bonplandia 3:240, 1855. [*Trichosalpinx chamaelepanthes* (Rchb.f.) Luer, Phytologia 54:395, 1983]

Syn.: *Pleurothallis* sect. *Acuminatae* subsect. *Lepanthiformes* Lindl., Folia Orch. *Pleuroth.* 32, 1859.
Lectotype here designated: *Pleurothallis arbuscula* Lindl., Edward's Bot. Reg. 28:Misc. 72, 1842. [*Trichosalpinx arbuscula* (Lindl.) Luer, Phytologia 54:394, 1983]

Syn.: *Lepanthes* sect. *Phyllocaulae* Barb. Rodr., Gen. Sp. Orch. Nov. 2:41, 1882.
Lectotype here designated: *Lepanthes carinifera* Barb. Rodr. Gen. Sp. Orch. Nov. 2:69, 1882. [*Trichosalpinx carinifera* (Barb. Rodr.) Luer, Phytologia 54:394, 1983]
Ety.: From the Greek *phyllon*, "a leaf," and the Latin *caulis*, "-stemmed," referring to the "leafy" stems.

Inflorescentia racemosa floribus coaetaneis. Labellum integrum trilobumve. Columna elongata plus minusve alata.

Except for the few species segregated into monotypic sections above, all the other species of the subgenus may be grouped together in this section.

Trisetella Luer, Phytologia 47:57, 1980.

Type: *Masdevallia triaristella* Rchb.f., Gard. Chron. 2:226, 1876. [*Trisetella triaristella* (Rchb.f.) Luer, Phytologia 47:58, 1980]

Ety.: From the Latin *trisetus*, "with three bristles," plus the diminutive, referring to the hairlike tails of the sepals.

Syn.: *Masdevallia* sect. *Triaristellae* Rchb.f., Gard. Chron. 6:226, 1876.
Type: *Masdevallia triaristella* Rchb.f., Gard. Chron. 2:226, 1876.
Ety.: From the Latin *triaristellus*, "with three little awns," referring to the tails of the sepals.

Syn.: *Triaristella* Brieg., Die Orchideen 448, 1975, nom. invalid.

Syn.: *Triaristella* Brieg. ex Luer, Selbyana 2:205, 1978, non Malyavkina 1949.
Type: *Masdevallia triaristella* Rchb.f., Gard. Chron. 6:226, 1876.

Syn.: *Triaristellina* Rauschert, Repert. Spec. Nov. Regni Veg. 94:459, 1983. nom. illeg.
Type: *Masdevallia triaristella* Rchb.f., Gard. Chron. 6:226, 1876.

About 15 interrelated species from Central and South America are included in this genus which originally had been treated as a section of *Masdevallia*. The little, caespitose plants are similar vegetatively to those seen in many other pleurothallid genera: narrowly elliptical leaves borne by abbreviated ramicauls with an annulus. The inflorescence is a succession of single flowers borne in a congested raceme atop a slender peduncle which exceeds the leaves. The dorsal sepal and the synsepal are variously caudate. The petals are small and membranous. The simple, longitudinally callous lip is sagittate or cordate at the base, the retrorse basal lobes projecting behind to either side of the central hinge to the wedge-shaped column-foot. The column is elongate with a hooded ventral anther with two pollinia, and a large ventral stigma.

Zootrophion Luer, Selbyana 7:80, 1982.

Type: *Specklinia atropurpurea* Lindl., Edward's Bot. Reg. 28:Misc. 81, 1842. [*Zootrophion atropurpureus* (Lindl.) Luer, Selbyana, 7:80, 1982]

Ety.: From the Greek *zootrophion*, "a menagerie," referring to the similarity of the flowers to the heads of different animals.

This genus was recently erected to accommodate those species residing in *Cryptophoranthus* which were unrelated to *Cryptophoranthus fenestratus* (Barb. Rodr.) Barb. Rodr., the latter the designated lectotype of the genus *Cryptophoranthus*. Those species related to *C. fenestratus* are now treated as a section of *Pleurothallis* subgen. *Acianthera*.

The 11 species of *Zootrophion* are distributed from Jamaica and Central America through the Andes. In most of the species the ramicaul is well-developed and enclosed by a series of inflated, compressed sheaths. The inflorescence arises from near the apex of the ramicaul with an annulus. The sepals are connate at the apex to form rigid, box-like flowers that resemble the heads of animals. A pair of "eyes" are formed, one on each side of the flower. Connation or connivence of the apices of the sepals has developed independently in several unrelated species or groups of species in the Pleurothallidinae. The comparatively small lip of *Zootrophion* is hinged to a stout column-foot. The column is elongate and the toothed apex partially covers the ventral anther. Two pollinia are present.

One new combination needs to be made:

Zootrophion schenckii (Cogn.) Luer, comb. nov.
Cryptophoranthus schenckii Cogn., Bull. Soc. Roy. Bot. Belgique 43:304, 1907.

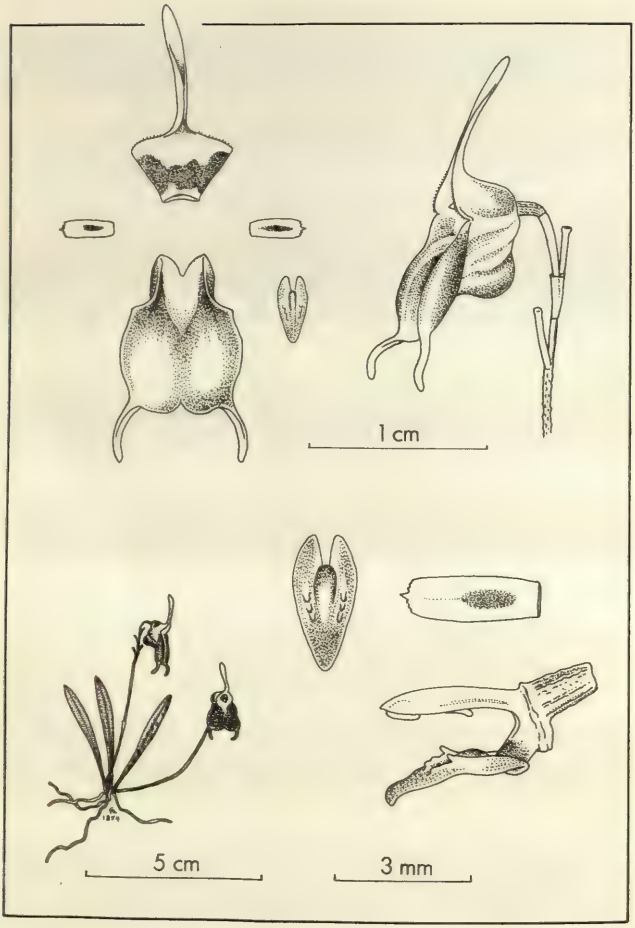

Plate 28. *Trisetella pantex* (Luer) Luer

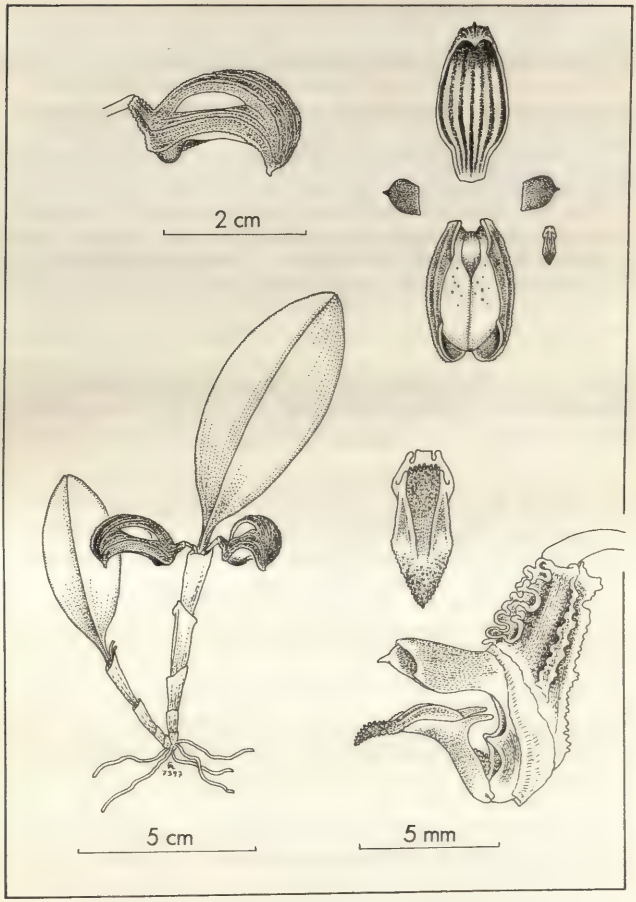

Plate 29. *Zootrophion hypodiscus* (Rchb.f.) Luer

GENERIC NAMES PUBLISHED IN THE PLEUROTHALLIDINAE

Acianthera Scheidw., Allg. Gartenzeitung 10:292, 1842.
= *Pleurothallis* subgen. *Acianthera* sect. *Brachystachyae*

Acostaea Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:283, 1923.

Acronia Presl, Rel. Haenk. 1:103, 1827.
= *Pleurothallis* subgen. *Pleurothallis* sect. *Pleurothallis* subsect. *Acroniae*

Anathallis Barb. Rodr., Gen. Sp. Orch. Nov. 1:23, 1877.
= *Pleurothallis* subgen. *Specklinia* sect. *Acuminatae*

Andreettaea Luer, Selbyana 2:183, 1978.
= *Pleurothallis* subgen. *Andreettaea*

Apatostelis Garay, Bot. Mus. Leafl. 27:185, 1980.
= *Stelis* sect. *Stelis*

Aspegrenia Poepp. & Endl., Nov. Gen. Sp. Pl. 2:12, 1836.
= *Octomeria* R.Br.

Barbosella Schltr., Repert. Spec. Nov. Regni Veg. 15:259, 1918.

Barbrodria Luer, Selbyana 5:386, 1981.

Brachionidium Lindl., Folia Orch. *Brachionidium* 1, 1859.
Syn.: *Yolanda* Hoehne

Brenesia Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:200, 1923.
= *Pleurothallis* subgen. *Acianthera* sect. *Brachystachyae*

Calyptrorchis Brieg., Die Orchideen 428, 1975, nomen invalid.
= *Pleurothallis* subgen. *Specklinia* sect. *Specklinia* subsect. *Specklinia*

Centranthera Scheidw., Allg. Gartenzeitung 10:293, 1842, non R.Br. 1810.
= *Pleurothallis* subgen. *Acianthera* sect. *Brachystachyae*

Chaetocephala Barb. Rodr., Gen. Sp. Orch. Nov. 2:37, 1882.
= *Myoxanthus* Poepp. & Endl.

Chamelophyton Garay, Orquideología 9:115, 1974.
Syn.: *Garayella* Brieg.

Cheiropterocephalus Barb. Rodr., Gen. Sp. Orch. Nov. 1:28, 1877.
= a genus in the Liparidinae

Colombiana Ospina, Orquideología 8:230, 1974.
= *Pleurothallis* subgen. *Scopula*

Condylago Luer, Orquideología 15:117, 1982.

Crocodeilanthe Rchb. f. & Warsc., Xenia Orchid. 1:10, 1854.
= *Pleurothallis* subgen. *Crocodeilanthe*

Cryptophoranthus Barb. Rodr., Gen. Sp. Orch. Nov. 2:79, 1882.
= *Pleurothallis* subgen. *Acianthera* sect. *Cryptophoranthae*

Dialissa Lindl., Ann. Mag. Nat. Hist. 15:107, 1845.
= *Stelis* sect. *Dialissa*

Dracula Luer, Selbyana 2:190, 1978.

Dresslerella Luer, Selbyana 3:1, 1976.

Dryadella Luer, Selbyana 2:207, 1978.
Syn.: *Trigonanthe* (Schltr.) Brieg.

Duboisia Karst., Allg. Gartenzeitung 15:394, 1847, non R. Br. 1810.
= *Myoxanthus* Poepp. & Endl.

Dubois-Reymondia Karst., Bot. Zeitung (Berlin) 6:397, 1848.
= *Myoxanthus* Poepp. & Endl.

Enothrea Raf., Fl. Tellur. 4:43, 1836, nomen illeg.
= *Octomeria* R.Br.

Erectorostrata Brieg., Die Orchideen 428, 1975, nomen invalid.
= *Pleurothallis* subgen. *Pleurothallis* sect. *Macrophyllae-Fasciculatae*

Frondaria Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15:29, 1986.

Garayella Brieg., Die Orchideen 425, 1975, nomen invalid.
= *Chamelophyton* Garay

Geocalpa (Krzl.) Brieg., Die Orchideen 440, 1975, nomen invalid.
= *Pleurothallis* subgen. *Sarracenella* Luer

Gigliolia Barb. Rodr., Gen. Sp. Orch. Nov. 1:25, July 1877, non Beccari. May 1877.
= *Octomeria* R.Br.

Humboldtia Ruiz & Pav., Fl. Peruv. Chil. Prodr. 121, t. 27, 1794, nom. conserv., non Vahl 1794, nom. rej.
= *Stelis* sect. *Humboldtia*

Kraenzlinella Kuntze, Lex. Gen. Phan. 310, 1903.
= *Pleurothallis* subgen. *Kraenzlinella*

Lepanthes Sw., Nov. Act. Soc. Sci. Upsala 6:85, 1799.

Lepanthopsis (Cogn.) Ames, Bot. Mus. Leafl. 1(9):3, 1933.

Lothiania Krzl., Gard. Chron. ser. 3, 75:173, 1924.
= *Porroglossum* Schltr.

Luerella Braas, Die Orchidee 30:108, 1979.
= *Masdevallia* subgen. *Pelecaniceps*

Masdevallia Ruiz & Pav., Fl. Peruv. Chil. Prodr. 122, 1794.
Syn.: *Luerella* Braas
Rodrigoa Braas

Myoxanthus Poepp. & Endl., Nov. Gen. Sp. Pl. 1:50, 1836.
Syn.: *Duboisia* Karst.
Dubois-Reymondia Karst.
Chaetocephala Barb. Rodr.
Reymondia Karst. ex Kuntze

Octandrorchis Brieg., Die Orchideen 425, 1975, nomen invalid.
= *Octomeria* R.Br.

Octomeria R.Br., in Aiton, Hort. Kew., ed. 2, 5:211, 1813.
Syn.: *Aspegrenia* Poepp. & Endl.
Enothrea Raf.
Gigliolia Barb. Rodr.
Octandrorchis Brieg.

Ophidion Luer, Selbyana 7:79, 1982.

Orchidotypus Krzl., Bot. Jahrb. Syst. 37:383, 1906.
= a genus in the Pachyphyllinae

Otopetalum Lehm. & Krzl., Bot. Jahrb. Syst. 26:457, 1899, non Miquel 1856.
= *Pleurothallis* subgen. *Kraenzlinella*

Pabstiella Brieg. & Sengh., Die Orchideen 429, 1975, nomen invalid.
= *Pleurothallis* subgen. *Mirabilia*

Palmoglossum Kl. ex Rchb.f., Xenia Orchid. 1:174, 1856, in synonymy.
= *Pleurothallis* subgen. *Specklinia* sect. *Muscosae*

Phloeophila Hoehne & Schltr., Arch. Bot. Sao Paulo 1:199, 1926.
= *Pleurothallis* subgen. *Acianthera* sect. *Phloeophilae*

Physosiphon Lindl., Edward's Bot. Reg. 21:sub t. 1797, 1835.
= *Pleurothallis* subgen. *Physosiphon*

Physothallis Garay, Svensk Bot. Tidskr. 47:199, 1953.
= *Pleurothallis* subgen. *Physothallis*

Pinelia Lindl., Folia Orchid. *Pinelia* 1, 1853.
= a genus in the Laeliinae

Platystele Schltr., Repert. Spec. Nov. Regni Veg. 8:565, 1910.

Pleurobotryum Barb. Rodr. Gen. Sp. Orch. Nov. 1:20, 1877.
= *Pleurothallis* subgen. *Pleurobotryum*

Pleurothallis R.Br., in Aiton, Hort. Kew., ed. 2, 5:211, 1813.
Syn.: *Acianthera* Scheidw.
Acronia Presl
Anathallis Barb. Rodr.
Andreettaea Luer
Brenesia Schltr.
Calyptrorchis Brieg.
Centranthera Scheidw.
Colombiana Ospina
Crocodeilanthe Rchb.f. & Warsc.
Cryptophoranthus Barb. Rodr.
Erectorostrata Brieg.
Geocalpa (Krzl.) Brieg.
Kraenzlinella Kuntze
Otopetalum Lehm. & Krzl.
Pabstiella Brieg. & Sengh.
Palmoglossum Kl. ex Rchb.f.
Phloeophila Hoehne & Schltr.
Physosiphon Lindl.
Physothallis Garay
Pleurobotryum Barb. Rodr.
Pseudoctomeria Krzl.
Pseudostelis Schltr.
Rhynchopera Kl.
Sarracenella Luer
Specklinia Lindl.
Talpinaria Karst.

Pleurothallopsis Porto & Brade, Arq. Inst. Biol. Veg. 3:133, 1937.

Porroglossum Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7:82, 1920.
Syn.: *Lothiania* Krzl.

Pseudoctomeria Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:219, 1925.
= *Pleurothallis* subgen. *Pseudoctomeria*

Pseudostelis Schltr., Anexos Mem. Inst. Butantan, Secc. Bot. 1(4):36, 1922.
= *Pleurothallis* subgen. *Crocodeilanthe*

Restrepia H.B.K., Nov. Gen. Sp. Pl. 1:366, 1816.

Restrepiella Garay & Dunsterv., Ven. Orch. Ill. 4:266, 1966.

Restrepiopsis Luer, Selbyana 2:199, 1978.

Reymondia Karst. ex Kuntze, Lex. Gen. Phan. 481, 1903.
= *Myoxanthus* Poepp. & Endl.

Rhynchopera Kl. in Link, Klotzsch & Otto, Icon. Pl. Rar. 2:103, t. 41, 1844.
= *Pleurothallis* subgen. *Rhynchopera*

Rodrigoa Braas, Die Orchidee 30:203, 1979.
= *Masdevallia* subgen. *Meleagris*

Salpistele Dressler, Orquideologia 14:6, 1979.

Sarracenella Luer, Selbyana 5:388, 1981.
= *Pleurothallis* subgen. *Sarracenella*

Scaphosepalum Pfitz., Nat. Pflanzenfam. 2(6): 139, 1888.

Specklinia Lindl., Gen. Sp. Orch. Pl. 8, 1830.
= *Pleurothallis* subgen. *Specklinia*

Steliopsis Breig., Die Orchideen 457, 1975, nomen invalid.
= *Stelis* sect. *Humboldtia*

Stelis Sw., J. Bot. (Schrader) 2(4):239, t. 2, fig. 3, a-g, 1799, nom. conserv.
Syn.: *Apatostelis* Garay
Dialissa Lindl.
Humboldtia Ruiz & Pav., non Vahl
Steliopsis Brieg.

Talpinaria Karst., Fl. Columb. 1:153, 1861.
= *Pleurothallis* subgen. *Talpinaria*

Triaristella Brieg., Die Orchideen 449, 1976, nomen invalid.

Triaristella Brieg. ex Luer, Selbyana 2:205, 1978, non V. S. Malyavkina 1949.
= *Trisetella* Luer

Triaristellina Rauschert, Repert. Spec. Nov. Regni Veg. 94:459, 1983, nom. illeg.
= *Trisetella* Luer

Trichosalpinx Luer, Phytologia 54:393, 1983.
Syn.: *Lepanthes* sensu Barb. Rodr.

Trigonanthe (Schltr.) Brieg., Die Orchideen 448, 1975, nomen invalid.
= *Dryadella* Luer

Trisetella Luer, Phytologia 47:57, 1980.
Syn.: *Triaristella* (Rchb.f.) Brieg. ex Luer
Triaristellina Rauschert

Yolanda Hoehne, Arq. Mus. Nac. Rio de Janeiro 22:72, 1919.
= *Brachionidium* Lindl.

Zootrophion Luer, Selbyana 7:80, 1982.

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